REFORMATION OF NATIONAL COMMON ENTRANCE TESTING IN INDIA

RECOMMENDATIONS
OF
THE HIGH-LEVEL COMMITTEE OF EXPERTS

October 2024

Submitted to

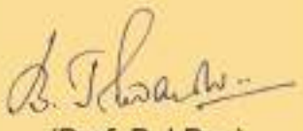
Department of Higher Education

Ministry of Education

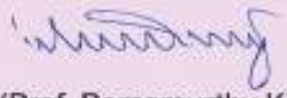
Government of India

HIGH LEVEL COMMITTEE OF EXPERTS

(Dr. Randeep Guleria)
Member

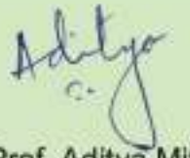


(Prof. B J Rao)
Member

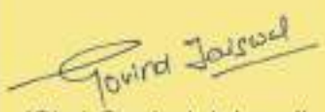


(Prof. Ramamurthy K)
Member

(Shri Pankaj Bansal)
Member



(Prof. Aditya Mittal)
Member



(Shri Govind Jaiswal)
Member-Secretary

(Dr. K. Radhakrishnan)
Chairman

CONTENTS

EXECUTIVE SUMMARY

This High-Level Committee of Experts was constituted by the Union Ministry of Education on 22 June 2024 to suggest reforms that ensure transparent, smooth and fair conduct of examinations through National Testing Agency (NTA) consequent to the rousing public concern on the integrity of entrance tests after reports of breaches and leakage of question paper from a few locations surfaced after results of the 'NEET-UG 2024' were declared (on 4 June 2024).

The remit to the Committee was to make recommendations on (1) Reforms in mechanism of the examination process, (2) Improvement in data security protocols, and (3) Structure and functioning of NTA. Subsequently, the Hon'ble Supreme Court enhanced remit of the Committee (2024 INSC 568 dated 2 August 2024) to encompass (4) Examination Security and Administration, (5) Data security and Technological Enhancements, (6) Policy and Stakeholder Engagement, (7) Collaboration, and International Cooperation, and (8) Support (mental health for students) and Training (Staff).

The Committee started its work on 24 June 2024, with strategic guidance of reforming National Common Entrance Tests to make them adaptable, accountable, credible, error-free, student-friendly, secured, tamper-proof, transparent and socially inclusive. The Committee worked in twenty-three formal full-day physical sittings, several supplementary break-out sessions and individually, as follows:

a) The Committee systematically elicited and collated concerns and suggestions of stakeholders especially students and parents, through the MyGov Portal where more than 37,000 responses came, mostly from 12th class students.

b) Besides personal interactions with the functionaries concerned, focus groups of students, senior officials of States and Union Territories, and senior officials of Central/State Investigation teams, the Committee also benefited from informed communications, insights, and counsel from eminent experts.

c) Committee objectively analysed the NTA's responsibilities, capabilities and inadequacies, the currently foreseeable vulnerabilities in testing life cycle, and takeaways from IITs and AIIMS on common entrance tests. Some of the contemplated

corrective measures were confirmed through improved interventions in the two national level tests (UGC-CSIR NET and CSIR-NET) held in July-Sep. 2024.

d) The Committee assimilated (1) the basic tenets of entrance testing, (2) pros and cons of the traditional Pen and Paper Testing (PPT), the most common Computer-Based Testing (CBT), and the most recent Computer Adaptive Testing (CAT), (3) mapped ground-level vulnerability points and their antidotes, and (4) globally emerging testing models, test security practices, policies and technologies. Therefore, the recommendations encompass plausible remedies for present challenges to future opportunities.

The recommendations of the Committee for 'Reformation of National Common Entrance Testing' from the forthcoming Testing cycle-2025 (and a few ones from 2026) are given in Chapter 6 of this Report (R.1 to R.60) and summarised below:

1) First and foremost, the Committee recommends restructuring the National Testing Agency as elaborated in Section 6.1. The salient points are:

   a. An empowered and accountable Governing Body with three designated Sub-Committees to oversee (1) Test Audit, Ethics and Transparency, (2) Nomination and Staff Conditions, and (3) Stakeholder Relationships.

   b. NTA needs to be manned with internal domain-specific human resources and a leadership team with domain expertise, proven experience and skill sets who should take charge of the testing process in the future.

   c. NTA should primarily conduct entrance examinations. Enhancing its scope for other examinations may be considered after the capacity of NTA is augmented.

   d. The Director General should be an officer not below the rank of Additional Secretary to GOI under the Central Staffing Scheme.

   e. The Committee recommends Ten specific Verticals for NTA, headed at Director level. Two Additional Director Generals should oversee key functional groups: ADG-1 to oversee five verticals related to (a) Technology, Products & Operations and (b) ADG-2 to oversee three verticals related to Test Security & Surveillance.

2) Each of the Test Indenting Agencies (e.g. UGC, CSIR) should work in tandem with NTA over the entire Life Cycle of testing, as their Knowledge partner and Examination-ethics partner for their intended test.

   NTA and every Test Indenting Agency should clearly define their roles and responsibilities through an MoU and set up an Advisory Body as detailed in Section 6.2.

3) NTA should develop institutional linkage with State/District Authorities for providing a Secure Test Administration Apparatus. The Committee recommends that Coordination Committees at State and District levels may be set up with specified roles and responsibilities (elaborated in Section 6.3).

4) The Committee recommends three policy interventions, in Section 6.4, as highlighted below:

   a. Multi-Session Testing, spread over typically a few days to a couple of weeks could be adopted, especially when registered participants exceed say, Two lakhs. The parameters and methodology of normalisation process that is integral to multi-session testing, should be well-defined, established, documented, and communicated transparently for each test.

   b. Multi-Stage Testing for NEET-UG could be a viable possibility that needs to be followed up. An acceptable framework with thresholds and test objectives of scoring/ranking at each stage, and number of attempts etc. may be evolved.

   c. Multitude subject streams in vogue for CUET admission tests may need to be rationalised as a compact cluster of related subject streams.

5) The Committee envisions a Testing Centre Allocation Policy (Section 6.5) to ensure that, ideally, the candidates should get a choice of Testing Centre in their district of residence (permanent or present one of study or work) declared bonafide in the application.

   Aberrations and strange patterns of choices of Testing Centres may be detected through data analytics, and remedial actions should be taken before the test. A suitable deterrent clause may be specified in the application form for curbing the allocation of such centres where the choices of Testing Centres appear 'suspicious and unusual' portending a mala-fide intention.

6) A coherent series of measures have been recommended (in Section 6.6) to prevent breaches and malpractices while conducting PPT and CBT modes of testing. Notably, NTA's Presiding Officer (analogous to the Election Process) should be overall-in-charge at each Testing Centre.

   Precautions related to setting question papers, printing press, transportation, selection of Testing Centres, seat allotment, frisking, steps to prevent impersonation, handling of un-used OMR sheets and question papers, back transportation of OMR sheets, declaration of results in respect of PPTs have been specified as well as additional measures for CBT, such as selection of test conducting third party service

provider, sanitisation of computer systems at the Testing Centres, allotment of seats and randomisation of NTA Observers have been elaborated in paragraphs R.9 to R. 26 in Section 6.6. It is underscored that each step be guided by clearly defined Standard Operating Procedures (SOPs) and monitoring of their compliance.

7) One specific recommendation is the introduction of 'DIGI-EXAM' system (on the lines of 'Digi Yatra') to ensure that ONLY the candidate writing the exam joins the intended programme. Essentially, multi-stage authentication of candidate's identity is envisaged which makes use of Aadhar, and biometrics and AI-based data analytics (as elaborated in Section 6.7).

8) The Committee has recommended a hybrid process of Computer-assisted Secure PPT (elaborated in Section 6.8).

In this novel hybrid method of CPPT, (1) the processes of CBT will be adopted till the encrypted Question Papers are delivered to the Confidential Servers of the Testing Centres, (2) subsequently the printing Question paper will be done at the Testing Centre, with due confidentiality, using High-Speed Printers, and (3) Question papers will be distributed to the candidates as in PPT. This will be prudent and pragmatic method to eliminate potential breaches during the printing, storage, and transportation chains of PPT. Pilot testing of this process should be undertaken before its operational induction.

A variant of this could be a model where delivery of question paper can be done through CBT model to each candidate, and OMR sheet can be used for answer collection. This model will also help to reduce vulnerability of both CBT & PPT.

9) Trusted Question Bank and a vibrant pool of competent experts with integrity are at the core of any entrance testing. Guidelines for setting and vetting Question paper, empanelment of teams for Confidential Operations (CONOPs) for formatting them to the secured digital platform at NTA, and the controlled access facilities for these crucial operations are elaborated in Section 6.9.

10) Secured and Trusted Testing Platform that facilitates secure storage of Question papers at the Command Centre of the Test Conducting Service provider, secured delivery of Question papers from Command Centre to the Testing Centres, and precautions in choosing robust encryption algorithms, are addressed in Section 6.10. It is highlighted that the steps of encryption/decryption be REFRACTORY to external ONSLAUGHTS at all stages.

11) The Committee recommends that every district in the country (except very thinly populated ones, perhaps) should have at least one secured Standardised Testing

Centre (STC) that can conduct PPT/CBT/CPPT and more based on the demand. Location, access, illustrative minimum configuration of a secured Testing Centre and the minimum essential infrastructure, candidate support facilities are spelt out in Section 6.11.

NTA may target developing at least 1000 secure Standard Testing Centres in the country, in a phased manner, in reputed Government institutions. This process may require a 'war-footing' approach.

12) The Committee recommends 'Mobile Testing Centres' (MTCs) to facilitate the aspirational candidates from rural, remote, relatively inaccessible areas and thinly populated areas (e.g. North-East, Northern Himalayan States, Andaman Nicobar Islands) (elaborated in section 6.12)

Typically, a large bus with seating capacity of 40-50 persons could accommodate 30 test takers, and multiples of it could be deployed as necessary. These mobile Testing Centres could double up as Digital Literacy Training Centres for such areas. MTCs should be equipped with Secure Servers that are connected to the Command Centre.

13) NTA must strengthen the Grievance Reporting and Redressal Cell (GRRC) that stakeholders could approach. The cell must be equipped with AI/ML-based Technology power to quickly assess and provide a response to the stakeholder query/complaint within a reasonable time frame (Section 6.13).

a. The NTA portal must have a 'Frequently Asked Questions' and their specific answers' section. Wherever possible, AI/ML-based "interactive bots" should be put in place in the portal so that the test-takers receive clarifications in the language of their choice for various queries that arise dynamically. It is possible to train the bots via AI modules to cover a very large repertoire of queries that will benefit the stakeholders.

b. Grievances that require deeper analyses must be referred to a committee that will address the queries promptly. NTA must keep a pool of experts who could be called upon to serve as committee members in demand. To address the queries on time, a few committees may have to be judiciously activated in parallel. All the committee decisions must go through a proper 'vetting' process in NTA before their decisions are conveyed to the aggrieved party.

14) Mental health support for students has now been recognised as one of the most crucial aspects of the overall preparedness and performance of the students, in general, and particularly the participating examinees. The Committee

acknowledged the steps taken by Ministry of Education to promote well-being of students. The Committee has observed it as one of the mainstream concerns that needs to be addressed to make our approach holistic.

Specific recommendations on wellness-related changes in testing system, reduction of exam stress, regarding coaching centres, improving quality of higher education, on employment, training teachers, sensitisation programmes for parents, and training students are significant.

15) Social inclusiveness has been addressed in Section 6.15, along with developmental initiatives with specific recommendations to support students, especially from socially disadvantaged groups and those belonging to deep rural backgrounds, for facing the National level admission PPT and CBT models with ease.

a. Recommendations on developmental initiatives to face High Stake Examinations focus on orientation sessions at schools/colleges, confidence-building and stress relieving sessions, familiarisation with CBT modes, user-friendly Mock Video sessions, FAQs on NTA Portal, and 'de-staking by self'.

b. It is suggested that either State or Central Government may devise suitable oversight mechanism(s), as the concern grows on coaching classes getting increasingly more structured into parallel-educational models for students, and with decreasing levels of physical participation of students in school classes. In parallel, the issue of empowering School Education System is highlighted.

16) The Committee has addressed Stakeholder engagement and communication strategy in Section 6.16. 'Test Takers' (students) are the primary stakeholders for the entrance tests and the stakes are high and critical in their careers, followed by the 'Test Mangers' (group of institutions and functionaries involved in conducting the Test), and the Public.

The Committee recommends that a modern, accessible, dynamic, and interactive Website of NTA (in multiple languages of India) with contents on Institutional information, Educational Testing materials including mock videos, and Testing Portal may be realised by NTA immediately with high professional standards, for example, comparable to that of Educational Testing Service (ETS).

17) The Committee has addressed, in Section 6.17, the need and scope of comprehensive training for the testing teams.

Nationwide entrance testing involves large and multi-domain testing teams that function in a concerted manner in the constantly evolving testing processes, technology of testing and information security.

Further, as the use of Technology in the examination process advance, it is necessary to train and update all stakeholders deployed at multiple levels so that they can understand, identify the challenges, and prevent potential breaches. Hence, NTA and its associates will have to reinvent themselves constantly via training and retraining mechanisms.

18) The Committee in Section 6.18 have listed a suite of 12 Standard Operating Procedures and Check points (excluding SOPs required for every step of the day-of-the-examination and post-examination that are general). Samples of a few Standard Operating Procedures adopted by JEE, GATE and JAM exams will serve as role-model. (Courtesy IIT System) are given in Appendix-1.

19) Finally, the Committee has summed up the recommended counter-breach measures.

In Chapter 7, recommendations (R.61 to R.94) with a long-term perspective have been elaborated:

1) Harmonisation and Unification of Tests for UG Admissions,
2) Migration to Computer Adaptive Testing,
3) NTA-Public Test platform and Infrastructure,
4) Empowering Higher Secondary School System,
5) Research in Educational Testing and Psychometry,
6) Coping with Information Security Advancements,
7) Adaptation of technological Advancements, and
8) International Cooperation and Collaboration.

The Committee envisages that in future, the NTA be transformed into a nimble, zero-error, adaptive and integrative process. Besides, the Committee envisions India emerging as a Global Leader in Educational Testing. Any Test Conducting agency that learns to operate nationwide testing in India successfully gets to train a robust model that can work at scale in varied conditions and contexts elsewhere in the world. One can surmise that such a model could surely be implementable globally as indicated Chapter 8 (R.95).

Chapter 9 presents a Conformance Analysis of the Committee's recommendations with NEP 2020.

In sum, the Committee has made 95 recommendations in Chapters 6, 7 and 8. It is essential that these recommendations, once accepted by the Government, are implemented in mission-mode.

The Committee recommends that Government sets up a High-Powered Steering Committee to monitor the implementation of these recommendations. Besides, a set of suggestions for closer and effective engagement between the Ministry and NTA have been given (R.97—R.101).

The Committee is grateful to the Government of India for this unique opportunity to contribute to the reformation of National Common Entrance Testing which marks a crucial turning point for the youth of India who hold the key for Viksit Bharat@2047 and the realisation of futuristic goals to transform India into a vibrant knowledge society and global knowledge superpower.

CONTRIBUTORS

1.	**Dr. K. Radhakrishnan** Former Chairman, ISRO & Chairman, Board of Governors, IIT Kanpur	Chairman
2.	**Dr. Randeep Guleria** Former Director, AIIMS Delhi	Member
3.	**Prof. B J Rao** Vice Chancellor, Central University of Hyderabad	Member
4.	**Prof. K Ramamurthy** Professor Emeritus, IIT Madras	Member
5.	**Shri Pankaj Bansal** Co-Founder, People Strong, and Board Member - Karmayogi Bharat	Member
6.	**Prof. Aditya Mittal** Dean Student Affairs, IIT Delhi	Member
7.	**Shri Govind Jaiswal** Joint Secretary, M/o Education, GoI	Member Secretary
8.	**Prof. Amey Karkare** IIT Kanpur	Co-opted Subject-Matter Expert
9.	**Dr. Debapriya Basu Roy** IIT Kanpur	Co-opted Subject-Matter Expert
10.	**Prof. Pratap Sharan** AIIMS, Delhi	Co-opted Subject-Matter Expert
11.	**Ms. Smita Srivastava** Director, M/o Education, GoI	Permanent Invitee

CHAPTER 1

PREAMBLE

1.1. The youth of India holds the key for Viksit Bharat@2047 and the realisation of futuristic goals to transform India into a vibrant knowledge society and global knowledge superpower. National Educational Policy 2020 aims to bring out the unique capabilities of each student to suit the needs of the 21st century, rightly so, with holistic, flexible and multi-disciplinary education at school and college levels.

1.2. The entrance testing process is a crucial link, especially between higher-secondary school education and higher education, and the start of a pursuit in the field of one's interest. Entrance testing has evolved as a globally acceptable process to unravel students' aptitude and potential for higher learning (for undergraduate, postgraduate and doctoral studies). It also serves as a unified and inclusive sieve for institution-specific common minimum standards for admission.

1.3. Entrance testing has been adopted in India over the past several decades, notably for admissions to professional courses, with clusters of institutions formulating the tests in specific formats. In November 2017, the Union Cabinet approved the creation of the National Testing Agency (NTA) as an autonomous and self-sustained premier testing organisation to conduct entrance examinations for admission in higher educational institutions in the country. NTA has been shouldering several high-stakes entrance and eligibility tests at the national level since its inception as a registered society in 2018.

1.4. This High-Level Committee of Experts (referred to as 'the Committee' hereinafter) was constituted by the Union Ministry of Education on 22 June 2024 after recent public concern on the integrity of entrance testing conducted by NTA, and its remit was enhanced by the Hon'ble Supreme Court (2024 INSC 568 dated 2 August 2024).

1.5. The Committee recommends specific measures for reforming National Common Entrance Tests to make them adaptable, accountable, credible, error-free, student-friendly, secured, tamper-proof and transparent. Restructuring of the National Testing Agency and its institutional linkages are recommended. These reformations with a long-term perspective are envisioned to facilitate India's emergence of a world-class system of entrance testing for youth empowerment.

1.6. The Main Report contains sensitive and confidential information pertaining to operational details. Hence, this abridged version of the Main Report has been prepared.

CHAPTER 2

GENESIS AND REMIT
OF HIGH-LEVEL COMMITTEE OF EXPERTS

2.1. The National Eligibility-cum-Entrance Test for Undergraduate Medical Education in all Medical Institutions of India (NEET-UG) of 2024 was conducted by NTA on 5 May 2024, in Pen and Paper Testing (PPT) mode for about 24 lakh candidates in a single session at 4750 Testing Centres spread over 571 cities in India and 14 cities abroad. After the results of 'NEET-UG 2024' were declared on 4 June 2024, reports of breaches and leakage of question paper from a few select locations surfaced.

2.2. High-Level Committee of Experts set up by M/o Education in June 2024

Consequently, the Department of Higher Education of the Union Ministry of Education constituted a seven-member High-Level Committee of Experts to suggest reforms that ensure transparent, smooth and fair conduct of examinations through NTA. The remit to the Committee was to make recommendations on:

1) Reform in mechanism of the examination process,
2) Improvement in Data Security protocols and
3) Structure & Functioning of National Testing Agency.

The Terms of Reference to the Committee are given in the Order No. F. No. 43-3/2019-TS-1/TEL dated 22 June 2024 of Ministry of Education (**Annexure-1**).

This Committee, chaired by Dr. K. Radhakrishnan, former Chairman of ISRO, comprised of (i) Dr. Randeep Guleria, former Director of AIIMS, Delhi; (ii) Prof. B.J.

Rao, Vice Chancellor, Central University of Hyderabad; (iii) Prof. K. Ramamurthy, Professor Emeritus, IIT Madras; (iv) Shri Pankaj Bansal, Co-Founder People Strong and Board Member Karmayogi Bharat; (v) Prof. Aditya Mittal, Dean of Student Affairs, IIT Delhi, as members, and (vi) Shri Govind Jaiswal IAS, Joint Secretary of the M/o Education as Member-Secretary.

2.3. Enhanced Remit by Hon'ble Supreme Court of India

Separately on the subject, 36 Writ Petitions (Civil) against the Union of India and Others were considered by the Hon'ble Supreme Court, which observed, interalia: "While the various issues discussed until now do not lead to the conclusion that the integrity of NEET was vitiated at a systematic level, the manner in which NTA has organised the exam this year gives rise to serious concern. …" (ref. Section F of the Judgement 2024 INSC 568 enclosed as **Annexure-2**).

The Hon'ble Supreme Court enhanced the remit for the above seven-member High-Level Committee of Experts to encompass:

4) Examination Security and Administration,

5) Data security and Technological Enhancements,

6) Policy and Stakeholder Engagement,

7) Collaboration, and International Cooperation, and

8) Support (mental health for students) and Training (Staff).

The detailed mandates under (4) to (8) have been specified under Section G of the above Judgement (**Annexure-2**).

2.4. Co-opted Subject Experts to the Committee

The Committee co-opted three experts viz. (i) Prof. Amey Karkare, IIT Kanpur (expert in Computer Systems, Computer-aided Education, and Software Engineering), (ii) Prof. Debapriya Basu Roy, IIT Kanpur (expert in Hardware Security and Applied Cryptography), and (iii) Prof. Pratap Sharan, AIIMS, Delhi (expert in Mental Health, Counselling and Stress Management). Ms. Smita Srivastava, a Director from Union M/o Education, ably assisted the Committee.

2.5. Deliberations of the Committee (June-September 2024)

The Committee started its work on 24 June 2024. Besides the 23 formal sittings, the Committee pursued its work through several supplementary break-out sessions. The Committee adopted a phased approach and identified actionable recommendations to be implemented from the forthcoming testing cycle and several ones with long-term perspectives. Notably, these measures envisage cooperative strategic engagement of (i) a reformed NTA, (ii) pro-active Test Indenting Agencies (e.g. UGC, CSIR), (iii) reliable Technology Platform Vendors, Testing Centres and other Service Providers, and (iv) State/District level authorities.

CHAPTER 3

IDENTIFYING AND ASSESSING SYSTEMIC AND SPECIFIC PROBLEMS

3.1 Surveys and Dialogues with Stakeholders

Recognising the rousing public concern, the Committee systematically elicited their concerns and suggestions.

3.1.1 Stakeholder Survey through MyGov Portal

The Committee sought suggestions, views and ideas from various stakeholders, especially students and parents, through the MyGov Portal (start date: 27 June 2024; End Date: 7 July 2024). The count of responses, category-wise, is tabulated in Table 3.1. below.

Table 3.1 Stakeholder Survey on MyGov Portal Count of Responses

Category	Count of Responses
12th Class Students	25,506
Graduate Students	3,165
Post-Graduate Students	1,591
Researchers	380
Parent/Guardian	4,433
Teachers/Academicians	1,269
Experts (Technology, Data Security)	207
Others (Conce rned General citizens)	593
Total Count of Responses	**37,144**

The Committee benefitted immensely from these responses for shaping its perspectives. A compendium of the highlights of the responses is archived.

3.1.2 Suggestions Received by the Committee

The Committee received several informed communications, insights and counsel from eminent experts. These comprise notably a set of proposals for conducting a large-scale examination in India, improving the quality of exams conducted, creating a trusted and secure Government Test Framework, and creating a continuous assessment system for Admissions.

3.1.3 Interactions with Functionaries and Focus Groups

The Committee benefitted from:

i. Interactions with the Hon'ble Union Minister of Education.
ii. Suggestions from Hon'ble MP (Dr. M. Thambi Durai).
iii. Observations of Secretary (HE) & Senior Officials of MoE.
iv. Perspectives of Test Indenting Agencies (UGC, CSIR).
v. Ideas from Regulatory Bodies (UGC, AICTE, CBSE, KVS, NVS).
vi. Ideas from a few Academic Leaders and Experts from different regions.
vii. Insights from a Global Expert (Educational Testing Service, India).
viii. Interactions with Student Groups at different levels and from different regions.

3.1.4 Interactions with Senior Officials of States and Union Territories

The Committee invited senior representatives from all States and Union Territories, especially those in charge of Higher Education.

Senior officials at the level of Additional Chief Secretary, Principal Secretary, and Directors representing the Governments of Assam, Goa, Karnataka, Kerala, Maharashtra, Mizoram, Punjab, Odisha, Rajasthan, Uttarakhand, Uttar Pradesh, Andaman & Nicobar, Chandigarh, Delhi, Jammu and Kashmir and Ladakh interacted with the Committee in person.

The Committee gathered their experiences in conducting state-level entrance examinations and large-scale tests, ongoing new initiatives, and potential utilisation of State/District machinery for NTA's Common Entrance Tests, in addition to State-specific views. Appreciably, Kerala presented an indigenous model of self-reliant computer-based testing adopted by the State for conducting all entrance examinations in Engineering, Architecture, Medicine and Pharmacy in June 2024.

3.1.5 Interactions with Senior Officials of Central/State Investigation Teams

The Committee interacted with Senior Investigation Officials of CBI (Addl. Director), Andhra Pradesh (ADGP), Bihar (DIG), Gujarat (DG & MD, GSPHCL), Haryana (SP, Rohtak), and Uttar Pradesh (ADG-SIT).

Valuable inputs on potential vulnerabilities and efficacy and possibilities of early threat/vulnerability detection mechanisms, with the participation of State/District Teams, were discussed.

3.2 Study of National Testing Agency's Mandate and Methods

The Committee objectively analysed the organisation's design, structure, essential competencies and skill sets, staffing pattern, roles and responsibilities, etc., commensurate with the current needs and future projections of Nationwide high-stakes and high-volume examinations and its international benchmarking.

The Committee had constant dialogue with the Director General, NTA. Presentations were made by a few senior functionaries of NTA and Technology Service Providers of NTA (TCS-iON, NSEIT, Innovatiview India). Further, an exclusive session was also held with NTA's Forensic Auditor (Ernst & Young).

3.2.1 Objectives of NTA

The objectives of NTA, approved by the Union Cabinet in November 2017, are as follows:

1) To conduct efficient, transparent and international standard tests to assess candidates' competency for admission.
2) To undertake research on educational, professional, and testing systems to identify gaps in the knowledge systems and take steps to bridge them.
3) To identify experts and institutions in setting examination questions.
4) To produce and disseminate information and research on education and professional development standards.
5) While conducting the online tests, the invigilation will be done through representatives of the stakeholder agencies. Standard Operating Procedures (SOPs) will be developed to handle any glitches that may arise while conducting examinations.
6) NTA will scientifically develop the test design by identifying the skills to be tested, using appropriate testing mechanisms for assessing students' competence, and will hire psychometricians to design the aptitude test. Thus, NTA will test both the aptitude and the subject knowledge of the students.

7) NTA may eventually move towards conducting a qualifying examination, bringing out only the percentile scores rather than going for an elimination/ ranking exam. Based on the percentiles, the user institutions can hold an additional test, if necessary, to select suitable candidates.

3.2.2 High-stake Entrance Tests Entrusted to NTA

Exhibit-1 gives the list of Entrance tests entrusted to NTA. Since its inception in 2018, NTA has administered 244 tests (PPT, CBT and Hybrid-mode). From an average of 67 lakhs per year during 2019-2021, the number of candidates registered for tests by NTA has grown to over 122 lakhs per year during 2022-2023.

3.2.3 An Outstretched NTA

Appreciating the efforts required to conduct such large national-level tests, the Committee noted that NTA outstretched itself to accommodate diverse requests from many Test Indenting Agencies for handling end-to-end operations of the tests. Alongside this, NTA was being called upon to take up recruitment tests for specific agencies.

EXHIBIT-1: HIGH STAKE ENTRANCE TESTS ENTRUSTED TO NTA

For Class-12 Level Students for Undergraduate (UG) Level Admissions

1) JEE-Mains: Joint Entrance Examination in engineering education at UG level in premier technical institutes.
2) NEET-UG: National Eligibility cum Entrance Test in medical education at UG level, as mandated by the Medical Council of India (now National Medical Commission), at Central/State and Private Colleges.
3) CUET-UG: Common University Entrance Test for admission to UG programmes in Central Universities/participating Universities at UG level.
4) NCET: National Common Entrance Test for admission to 4-year Integrated Teacher Education Programme.

For Undergraduate Students for Post Graduate Level Admissions

5) CUET-PG: Common University Entrance Test for admission to PG programmes in Central Universities/participating Universities at PG level.
6) GAT-B: Graduate Aptitude Test of Biotechnology for admission to PG programmes supported by D/o Biotechnology (DBT).

7) AIEEA-PG: All India Entrance Examination for admission to PG programme in Agricultural, Veterinary, Horticultural and Fisheries Universities (entrusted by ICAR).
8) GPAT: National Level Graduate Pharmacy Aptitude test for entry to M.Pharm programme.
9) CMAT: Common Management Admission Test for Management Programme(s) in the country (excluding IIMs who conduct their own Common Admission Test, CAT).
10) Entrance Tests for IIFT-MBA.

For Research Fellowship and Eligibility for Appointment as Assistant Professor

11) National Eligibility Test on behalf of UGC (UGC-NET) for awarding of Junior Research Fellowship (JRF), eligibility for appointment as Assistant Professor, and admission to PhD in Indian Universities and Colleges (present provision to take examination in any one of the 83 subjects including humanities, social sciences, management and education presently).
12) Joint CSIR UGC NET, to determine the eligibility of Indian nationals for Junior Research Fellowship (JRF), Assistant Professor and admission to PhD in Indian Universities and Colleges (focus on science subjects: Chemical Science, Earth Science, Physical Science, Life Science and Mathematical Science).
13) All India Competitive Examination (AICE) for JRF/SRF (PhD) in Indian Agricultural Universities (entrusted by ICAR).
14) Biotechnology Eligibility Test (BET)- for award of DBT-JRF.
15) PhD Entrance Test for Universities- DU, JNU, BHU, BBAU, etc.

[Note: Besides, NTA conducts a few more recruitment examinations mandated by Supreme Court, a few High Courts, Central Departments, etc., as well as for students of Grade 6 to Grade 11 for SHRESHTA, PM Yashasvi Yojana, State Olympiad, etc.]

3.2.4 High Dependence on Service Providers

NTA has been operating as a single window agency without the active involvement of the Test Indenting Agencies. NTA has conducted more than 240 examination since its inception involving over 5.4 crore candidates. It is also expected that the number may increase in coming years. NTA's present capacity and internal domain expertise need to be augmented for executing end-to-end testing processes. successfully. It will ensure lesser dependency on outsourced agencies and other testing resources required.

3.3 Takeaways from IITs and AIIMS on Common Entrance Tests

The Committee analysed the key success factors of the Common Entrance Examinations that were conducted creditably over decades by the IIT System and AIIMS, though in separate stand-alone streams.

3.3.1 Cardinal Takeaways from IIT System and AIIMS

The cardinal takeaway for the current task on hand is that the amalgam of 'indentor' and 'conductor' in both cases for the end-to-end chain has ensured:

1) Identification of key responsible individuals and chain of command with competence, integrity and passion.
2) Adequate talent pool for trusted question bank and confidential operations.
3) A well-defined Standard Operating Procedures (SOPs) for every process in the test cycle to minute details.
4) Well-defined and coordinated role for Local Authorities.
5) Strict adherence to timelines.
6) Systematic communication with stakeholders (e.g. students, parents, local authorities).
7) Conflict Resolution and Grievance Redressal Mechanisms.
8) Seamless transition of testing teams and preservation of institutional memory with continual improvements.

3.4 Lessons from Interventions in TWO Imminent Tests

The Committee had made prudent interventions and advisory support to NTA and its prominent service providers to combat potential vulnerabilities and leaks while they resume the imminent UGC-CSIR NET and CSIR-NET tests in Computer-Based Testing (CBT) mode.

Resultantly, both Test Indenting Agencies viz. CSIR and UGC acknowledged the improved test experiences in these test rounds. These steps helped the Committee to reconfirm experimentally some of the contemplated corrective measures.

3.5 Vulnerabilities in Testing Life Cycle

Interactions with Senior Officials of States and Union Territories and Central Investigation Teams (Ref. 3.1.4, 3.1.5), former Chairpersons of JEE/GATE/JAM and the Forensic Auditor of NTA's tests facilitated the Committee for a better appreciation of the potential vulnerabilities (patterns of breaches, malpractices, impersonation etc.) that could occur in the PPT and CBT modes; some are specific to the mode of testing while others are generic.

CHAPTER 4

ESSENTIALS OF ENTRANCE TESTING AND FUTURE POSSIBILITIES

4.1 Basic Tenets of Entrance Testing

Entrance Testing (for UG level admissions especially) is the beginning of a journey for higher education in the field of one's interest. Ideally, Entrance Testing should aim to gauge the analytical and critical capabilities of the candidate and her/his aptitude for the given domain of learning.

Entrance Testing should be a barometer to evaluate and select a suitable candidate for the study of the subject/assignment based on merit (rather than to eliminate). The National Common Entrance Testing to be conducted in India should aim to achieve the following:

1) Student friendliness: Students should be able to choose a date, time and location to take the examination within a specified period while being aware of approximate/exact performance.
2) Multiple opportunities: Students should be able to take an examination multiple times to improve their scores within a specified period.
3) Scalable: Any number of students (e.g., hundreds to thousands to several lakhs) should be able to take the examination within a specified period without affecting the quality of the examination. Proper model(s) of normalisation of scores/performance within multiple exams based on the total number of candidates appearing must be applied transparently for the candidate to assess their performance.

4) Accuracy: The score obtained by student truly reflects their innate ability and learning vis-a-vis the specified syllabus for the exam.

5) Precision: The score obtained by the candidate improves only when the candidate's ability improves, especially in comparison to the pool of all candidates appearing in the examination.

6) Fairness: Built-in safety features and safeguards for preventing malpractices.

7) Legally Tenable: It should be aligned to judgements of Hon'ble Courts in the past and within the purview of current legal systems.

8) Adaptable for streams: Should allow the conduct of examinations for varied streams and levels. Redundancy in streams and subjects needs to be addressed to minimise stress.

9) Adaptable for purpose: Should be usable for 'qualifying' as well as for determination of 'rank-based-merit' and/or 'aptitude' via differential scores.

4.2 Test Design

The test design should follow a balanced approach rather than encouraging 'rote learning'. For example, the well-recognised 'Bloom's Taxonomy' provides the learning outcomes in the form of 'Remembering', 'Understanding', 'Applying', 'Analysing', Evaluating' and 'Creating', and these could be adapted to design an appropriate template for the Question Paper.

4.3 A Case for Transition to Computer-Based Testing

Primarily, there are two modes for the conduct of examinations, namely Pen and Paper-based Tests (PPT) and Computer-Based Tests (CBT).

4.3.1 Pen and Paper Testing (PPT)

The traditional pen and paper test is a type of assessment in which students are presented with question papers to be answered by writing or shading the correct answers in OMR sheets.

PPT involves multiple agencies' engagement in printing, transporting, and storing question papers and OMR sheets before they reach the centre. This involves many third-party agencies, viz., printing press (owner and employees); packing work and storage till transportation operation; transportation logistics support agencies and a network of fleets that travels throughout the country, handing over to two or more national Banks/storage rooms in each city. Then, city coordinators take over

and transport the question papers to Testing Centres. This process of printing, transportation, storage and handling multiple sets of question papers involves huge expenses and increases potential leakages in one of the weakest links in the supply chain.

4.3.2 Computer Based Testing (CBT)

A CBT requires candidates to sit in front of a computer terminal (node) allocated to them against their Roll number and Admit card. After logging the candidate will get detailed instructions for the examinations. At the designated time of the start of the examination, the candidates will be able to proceed and see the questions on the computer screen using the computer mouse. The keyboard attached to the computer, if any, will be disabled during the entire duration of the examination.

Depending on the type of question, the answers to questions can either be entered by clicking on the virtual on-screen keyboard (numeric or otherwise) using the computer mouse or by clicking the chosen option(s) using the computer mouse. Candidates will have the option to change/modify answers already entered at any time during the entire duration of the examination.

4.3.3 Advantages of CBT from the Perspective of 'Test Design'

1) Any form/type of question in PPT can also be created in CBT. However, the vice-versa is not true.

   For numerical-type questions, answers in pseudo-"continuous" form up to defined precision can be sought compared to only discrete integer-type responses in PPT.

2) Different types of alpha-numeric responses in CBT can be sought from candidates compared to only a limited type of specified responses that can be recorded on OMR sheets.

3) The length of questions, including graphics/diagrams/tables, is not constrained by available paper space in CBT.

   This provides more flexibility in creating more pictorial and conceptual questions independent of the language (and, thus, also free of artefacts pertaining to translation from one language to another).

4) The variety of questions that can be asked in CBT is much greater than in PPT due to (2), and (3) above.

Hence, there is a strong case for the transition from PPT to CBT as the preferred methodology, while challenges in reaching out to under-served areas could be addressed simultaneously along with the requirements of a secured platform, network, test infrastructure and competent human resources.

4.4 Classical Test Theory and Item Response Theory

Classical Test Theory and Item Response Theory are two mathematical paradigms used to analyse and score tests. A wide body of research, writing and comparative analysis on these two paradigms exists.

- Classical Test Theory (CTT) requires assumptions about (a) the difficulty of each question in an examination and/or (b) testing the ability of all examinees simultaneously to be able to answer similar/same questions of defined difficulties, and/or (c) the 'ability' of examinees appearing in the examination.
- Item Response Theory (IRT) generally overcomes the above limitations resulting from the assumptions of the Classical Test Theory by rating the performance of examinees in the examination and considering both the ability of each of the examinees and the questions they answer in an examination.
- Some applications, such as Computerised Adaptive Testing, are enabled by IRT and cannot reasonably be performed using only CTT. IRT provides more sophisticated information which allows a researcher to improve the reliability of an assessment.

4.5 Scoring and Ranking

Examination systems worldwide are transitioning to examinations/tests utilising the IRT. However, the well-accepted fact that examinations based on IRT result in individual 'scores' for examinees instead of 'ranks' relative to each other needs to be appreciated. After all, a single available seat cannot be awarded to, or be occupied by, multiple candidates with the same/similar scores.

The conversion of 'scores' to 'ranks' through well-established normalisation procedures also addresses such challenges. However, this needs to be explored further through research. It is imperative to be completely transparent in this process by (a) providing clear apriori formulations for the calculation of scores, and (b) providing all the data required for the calculation of scores (and subsequent ranks, if required) for all examinees while reporting the actual score/rank. The bottom line is for an examinee to accurately calculate their score/rank based on their absolute performance in an examination.

4.6 Computer Adaptive Testing (CAT)

Computer Adaptive Testing (CAT) is a method of assessment with a scientific and mathematical foundation based on IRT. It is a modern form of evaluation that adjusts difficulty level, and order of questions based on the test taker's performance in real-time. Unlike static testing, where the questions are predefined and fixed, CAT adapts to everyone's ability dynamically. CAT provides several benefits, such as time efficiency, increased accuracy, enhanced test security, and improved test experience. The Graduate Record Examination (GRE) and Graduate Management Admission Test (GMAT) are based on CAT. Currently, none of the large-scale examinations conducted in India use the Internationally validated mode of CAT.

4.7 Points to Ponder on Adoption of Item Response Theory

It is important to note that complete reliance on Item Response Theory (e.g. through Computer Adaptive Testing) may pose a bigger challenge in admissions based on single entrance examinations (even if multiple shifts are correctly normalised). Thus, developing hybrid models of examinations based on CTT and IRT by the TIAs has become imperative. These may include examinations with 'compulsory' and 'optional' sections with varying minimum scoring requirements in different sections.

CHAPTER 5

EMERGING TEST SECURITY PRACTICES, POLICIES, TECHNOLOGIES

5.1 A Holistic Test System

A holistic testing system has three components: (a) policy, (b) practices, and (c) platform. This chapter discusses modern policies like adaptive systems so that we move towards a most inclusive approach. This will become the guiding force for India's testing approach in the future. We then move to various "Practices" that are guided by the policy framework explained. How can we create an experience of ease and modernity with the highest level of security yet maximum reach? Scalability and data will be the cornerstone of our proposed practice framework. Eventually, we conclude with 'Platform', which will be a case in point for digital public infrastructure to test and enable the youth and empower them with a most configurable platform that accounts for content requirements, security, geo-sensitivities, speed, student friendliness and a tester's delight in fulfilling its social responsibility towards a 'Viksit Bharat'.

5.2 Global Trends and Best Practices

It is pertinent to note that Educational Testing Services (ETS), USA are the global pioneers in the testing space, who administer important tests like GRE, ToEFL, etc. worldwide in 180 nations and scoring for 50 million annually, besides frontier research in educational testing. To assimilate the emerging global trends and best practices, the Committee interacted, in hybrid mode, with senior officials of ETS, USA. The key takeaways are compiled with their assistance, in Sections 5.3 and 5.4 below.

5.3 Test Security Practices, Policies and Technologies

1) Leveraging Technology to Safeguard Assessments – From content creation to assessment methodologies, technological solutions must stay ahead of fraud and other security threats. Biometric Authentication is also a part of it, with incorporation of the latest and robust biometrics for candidate authentication.
2) Artificial Intelligence and Machine Learning – Specifically for 'auto-proctoring' to implement real-time, human-free behavioural monitoring to prevent cheating.
3) Use of Blockchain Technology helps to preserve complete audit-trails and proper records at every stage of the examination.
4) Automated registration, scheduling, scoring, and reporting of results, and Feedback for implementing global accessibility and inclusivity at different levels. Integration of digitalisation also becomes student friendly by minimising Travel and Associated Costs.
5) Data-Driven Insights: Informing Decision-Making – Data analytics, especially post- testing are important for the evolution of examination standards and enhanced test design.
6) Robust mechanisms for incident reporting and investigations need to be put in place to ensure the integrity of the examinations – these are key to maintaining 'brand' and protection of reputation.

5.4 Testing Models

1) Linear Testing (LT) vs. Linear on the Fly Testing (LOFT) – These are variants of implementing Classical Testing Theory vs. Item Response Theory discussed in Chapter 4. The adaptability of test systems towards specific requirements needs to be regularly updated. This may also extend to 'Adaptive Testing' with careful considerations to complexities in comparative evaluations. A part of testing models can also be exploring AI - it promises to provide personalised evaluation methodologies but needs proper research (training datasets) before onsite implementation.
2) Legal protection - Expertise required for proper safeguarding of processes, intellectual property and upholding of the reputation of the examination system.

CHAPTER 6

REFORMATION OF NATIONAL COMMON ENTRANCE TESTING (PHASE-1)

6.1 Restructuring and Transforming National Testing Agency

R.1	**First and foremost, the Committee recommends restructuring the National Testing Agency.**	
	a)	The Government may consider continuing NTA as a Society or re-define it as a Statutory Body (under the Union Ministry of Education) in due course.
	b)	The Governing Body of NTA (GB-NTA) may be recast as an empowered and accountable Apex Body that is mandated to meet quarterly (or more frequently as needed). GB-NTA may be chaired by a Non-Executive Chairman (an Eminent Technocrat, Academic Leader or Industry Leader).
	c)	The Director General (DG) should be the Chief Executive Officer of NTA. She/He should be an officer not below the rank of Additional Secretary to GoI under the Central Staffing Scheme.
	d)	Besides the Non-Executive Chairman, and the Director General (Ex-Officio Member), GB-NTA should include a senior representative of the Union Ministry of Education not below the level of Joint Secretary (Ex-Officio Member), senior representatives of a few Test Indenting Agencies (on rotation), and a few eminent domain experts (on rotation) of international repute in Educational Testing, Technology, and Information Security/Cyber Security, Finance and Legal matters. The non-ex officio members may be rotated once in three years, ensuring a minimum overlap of 6 months.

	e)	GB-NTA should set up three designated Sub-Committees to oversee (i) Test Audit, Ethics and Transparency, (ii) Nomination and staff Conditions, and (iii) Stakeholder Relationships.
	f)	There must be 10 functional verticals in NTA, to be headed at appropriate levels as given below: 1) Digital Infrastructure, Technology, and Products 2) Nation-wide Testing Centre Infrastructure 3) Research & Development 4) Transparency & Communication 5) International Collaboration 6) Information Security 7) Test-Security and Real-Time Monitoring 8) Vigilance & Forensics 9) Admin., HR and Capacity Building 10) Finance and Legal matters
	g)	The DG should be assisted by 2 Additional Director Generals and Directors as under: 1) Additional Director General (Technology, Products & Operations) who should oversee Verticals 1, 2, 3, 4, & 5, with the support of at least 5 Directors assigned to specific tasks. 2) Additional Director General (Test Security & Surveillance) should oversee Verticals 6, 7, & 8, supported by at least 3 Directors assigned to specific tasks. 3) Director, Admin. HR & Capacity Building (head of Vert. 9), reporting to DG. 4) Director, Finance & Legal (head of Vert. 10), reporting to DG.
	h)	The above proposed organisational structure of NTA may be reviewed after 5 years.
R.2	**NTA needs to be manned with internal domain-specific human resources and a leadership team with domain knowledge, proven experience and skill sets who should take charge of the testing process in future .**	
	a)	NTA should primarily conduct the entrance examinations (1) – (15) as mentioned in Exhibit 1. Enhancing its scope for other examinations may be considered after the capacity of NTA is augmented.
	b)	It is prudent to avoid permanence while staffing NTA. Still, continuity and institutional memory must be maintained by longer tenure of Executives and domain experts drawn through Central Staffing Scheme or from Academic/Specialised Organisations.
	c)	To attract competent and willing persons to relocate to NTA, attractive service conditions may be devised (e.g. special pay/higher grade on deputation, performance-related incentive schemes, waiver of age limit etc.)

6.2 Role for Test Indenting Agencies over Testing Life Cycle

R.3	**NTA should work in tandem with the Test Indenting Agencies (TIA) over the entire Life Cycle of Testing.**	
	a)	The TIA concerned (e.g. UGC, CSIR) should be knowledge partners to NTA, setting short-term and long-term goals for more innovative and inclusive methods of assessment, continuous updating based on feedback, and global trends. TIAs should also be the NTA's examination-Ethics and Knowledge Partner. TIA should provide knowledge resources to NTA for setting up question papers, while the primary responsibility for question paper setting and examination conduct process would continue with NTA.
	b)	NTA and every TIA should clearly define the roles and responsibilities through an MOU. There should be an advisory body, co-chaired by DG-NTA/representative and TIA representative, to lay down the broad framework for conduct of the examination. Advisory body should meet before examination and as when required.
	c)	The Advisory Body should advice NTA on the processes of the testing life cycle from the release of the advertisement, test schedule and calendar of events, mock testing material, information about the test city, issue of hall ticket, setting/vetting and release of Question Paper and model answers, duration for challenging model answers, freezing of answer keys, release of normalised score/marks, merit list, and grievance redressal with respect the specific testing. An illustrative brief is given in Exhibit-2. This will be without prejudice to the primary role of NTA as the Test Conducting Agency.
	Exhibit-2: Illustrative Brief on Advisory Body • Details to be sought from the candidates on the Application Submission Portal • Roles and responsibilities of parties involved (TIA, NTA, Testing Centres, local State administration) in providing logistics support for the Examination. • The number of unique papers, the syllabus for each paper and the test duration. • Preparation of calendar for the Test (preparation, conduction and declaration of results), including deadlines to be adhered to by TIA and NTA. • Each examination must be ***insured*** to take care of any necessity that may likely cause additional expenses due to postponement/ cancellation/ conduction for the second time.	

	• The Financial Model (fees, expenses, including competitive honoraria for CON-OPs) should make the Examination self-supporting. The Committee should decide on the honoraria, etc., including all operational costs. The Financial Model must accommodate sufficient resources for R & D activity at NTA to remodel the testing ecosystem dynamically. • The Financial Model should include insurance coverage for people involved, coverage for persons involved in operations (QP setters, Centre observers from TIA, flying squad members, etc., during their duty, including travel), PPT-based exams-question paper leakage (during printing, transit, storage in strong rooms, damage to question papers during transit, PPT and CBT examination interruption due to specified circumstances). Adoption of best practices from the GATE-JAM model is recommended. • The identification of Testing Centres should not be constrained by financial viability (overall examination break-even should be considered and not centre-wise breakeven). • Coordinate the finalisation of modalities and approve the third-party work order. • Review the candidates registered, and the number of centres required. • Review of the critical operations as per the schedule. • Prepare SOP for all the persons' operations involved in the test (ex, coordinator for each city, Test lead, Centre presiding officer, invigilator, IT team at the centre, support staff, candidates, etc.) • TIA receives the centre details, and the number of candidates assigned to each centre to enable them to identify the Test leads early. • Review the preparedness before the Examination. Perform a joint-audit of the test-centers by involving local city administration, police apparatus and intelligence officials just prior to the exam. • Post-examination review (Debriefing) – TIA provides feedback from the Test leads on the assessment of centres, invigilators and the performance of the third-party staff. The issues faced in the Testing Centre include candidates with doubtful identities, unethical issues, unforeseen situations, how each issue was handled and whether SOPs were fully complied with or not. Learning from the debriefing meeting should be considered for revision, if any, is needed in the SOP.

	• Approval of the recommendation from QP setting/vetting teams based on the post-exam feedback received (dropping of Question(s)/giving marks, etc.). • Finalisation of Results is according to the approval for release of the results. The "Double-blind" compilation of results is a must, as it ensures a robust mechanism to combat any charges of corruptibility in the system. • Approves the responses for i) RTI queries and ii) affidavits for court cases (if needed) • Discusses the statistical analysis of the performance of candidates prepared by NTA and approves the Report on the Examination. The minutes of each of the meetings should be maintained confidentially.

6.3 Role for State/District Authorities in Secure Test Administration

R.4	**NTA should develop institutional linkage with State/District Authorities for Secure Test Administration.**	
	a)	Designated State-level and District-level Coordination Committees, with composition, roles and responsibilities defined below in Exhibit-3 (State level) and Exhibit-4 (District level), should be set up and utilised.
	Exhibit-3: State-level Coordination Committee for NTA **Suggested composition of the State-level Coordination Committee** • Nodal Officer (Civil) nominated by Chief Secretary • Representative of State Police • Nodal Officer nominated by DG, NTA • State-level NIC Officer • Subsidiary Intelligence Bureau (SIB) Officer • Any other member co-opted by the Committee **Roles and responsibilities of the State-level Committee:** • Establish a hotline between the Chief Secretary, DGP and DG-NTA. • Prepare an integrated strategy to break the nexus of the paper leak mafia.	

- Prepare an exam-specific strategy for the major examinations such as JEE, NEET, UGC-NET, CUET, etc., to ensure fair, transparent, and zero error examination. Specific briefing is to be given to the District Committee to prepare such examinations.
- Ensure that District-level Committees are being constituted and operational.
- Review the performance of the District-level Committee after every major examination.
- Submit a consolidated report based on the District-level Committee observations and suggestions to NTA for necessary action.

Exhibit-4: District-level Coordination Committee for NTA

Suggested composition of the District-level Coordination Committee

- District Magistrate (Chairperson)
- Head of the Police force in the district
- District Nodal Officer (NTA)
- District Educational Officer
- District IB Officer (DCIO/AD)
- NIC Officer

Roles and responsibilities of the District-level Committee:

- The district committee should identify suitable Testing Centres for the PPT and CBT after thoroughly scrutinising the previous year's examinations conducted at these Testing Centres. Further, background analysis of the centre's owners, previous incidents of paper leaks, and inputs of the Intelligence Bureau/Local Intelligence Unit (LIU) should be considered while suggesting the list.
- Prepare a list of suspicious elements/miscreants and keep close vigilance on their activities.
- While suggesting examination centres, due care will be taken to ensure adequate infrastructure. A list of PWD-friendly centres should be provided separately.
- The district committee should also prepare a strategy for safe transportation of the question paper (in case of PPT) from the custodian to the Testing Centres with adequate security of the District Police / Paramilitary Force.

	• The NTA official should ensure the safety of thequestion paper and OMR sheets until the exam is over and the answer sheets and the remaining question papers are deposited safely. Assistance from the State and District administration will be taken wherever required. • All centres (in the case of CBT) should be sanitised by the third party and rechecked by the NIC team and NTA representative. **This is a sensitive step as several malpractices have been found due to the nexus of the workforce responsible for sanitisation.** • Testing Centres should be sealed in the presence of the District Administration and Police and should be guarded till the centre is de-sealed for the examination in the presence of District Administration and NTA officials. • Establish a CCTV Monitoring Centre at the District level. This should be manned by the NTA and District Admin officials. The CCTV Monitoring Centre should strictly monitor all the CCTV footage, and it should also be ensured that all the DVRs are being secured and deposited to NTA safely on the day of the examination. • Prepare a strategy to maintain law and order during the examination. In case of an emergency, the NTA communication cell should be immediately informed of further directives.

6.4 Policy Interventions in Testing Process

R.5	**Multi-Session Testing, spread over typically a few days to a couple of weeks could be adopted, especially when registered participants exceed say, 2 lakhs.**	
	a)	Normalisation Process is integral to multi-Session testing. This is a statistical process. The parameters and methodology of normalisation should be well-defined, established, documented and communicated transparently for each test.
R.6	**Multi-Stage Testing for NEET-UG could be a viable possibility that needs to be followed up.**	
	a)	An acceptable framework with thresholds and test objectives of scoring/ ranking at each stage, and number of attempts etc. may be evolved.

R.7	**Multitude subject streams in vogue for CUET admission tests may need to be rationalised as a compact cluster of related subject streams.**

6.5 Testing Centre Allocation Policy

R.8	**Testing Centre Allocation Policy should aim to ensure that, ideally, the candidates should get a choice of Testing Centre in their District of residence (permanent or present one of study or work) declared bonafide in the application.**	
	a)	Aberrations and strange patterns of choices of Testing Centres may be detected through data analytics, and remedial actions should be taken before the test.
	b)	A suitable deterrent clause may be specified in the application form for curbing the allocation of such centres where the Testing Centre choices appear ***'suspicious and unusual'*** portending a mala-fide intention.

6.6 Measures to Prevent Breaches and Malpractices in PPT and CBT

6.6.1 General Measures

R.9	**The Presiding Officer (of NTA) should be overall-in-charge of the test and ensure that the process happens as per predefined SOPs.**
R.10	**Important tests and high-stake tests should be conducted with the help of the State Governments (as per R4 above) in the way the elections are conducted.**
	a) Close vigilance on any interfering, malicious entities must be maintained with the help of the State/ District level committees.
R.11	**SOPs should be communicated to each and every person involved in the Testing process. NTA, TIA and Third-Party platform providers should brief all the key persons physically, seek their suggestions and clarify their doubts.**
R.12	**The integrity of members must be verified during the creation of Flying Squads. The selection process should be kept confidential.**
R.13	**An online portal should be developed to report cases of collusions/ malpractice/ cheating.**

6.6.2 Specific Measures for PPT

R.14	**Precautions while setting up of Question Papers (QPs)**:
	i. The setting of multiple sets (more than 3) of QPs, two or three of which could be chosen by the NTA, and one set could be kept as backup. ii. Special (lengthy) codes can be used for different sets rather than A, B, C, and D. iii. Sequencing of answer options for similar/ same questions must be altered in different sets.
R.15	**Precautions pertaining to Printing Press:**
	i. Printing press verification must be done before handing over the responsibility. ii. Printing, packaging and transportation of QPs must be strictly monitored. iii. Printing press must be secured at every entry/ exit gate by alert guards. iv. NTA and TIA must have their senior representatives oversee the entire printing process. v. Every staff at the printing press must have an ID to prevent any unauthorized entry. vi. Staff posted in the printing press must be scanned thoroughly at every entry/ exit to prevent the movement of any unauthorized material in or out of the premises. vii. Wearing shoes should not be allowed while working within the press premises. viii. No outsider/ visitor should be allowed entry during the QP printing process. ix. There should be no conflict of interest in any person dealing with the examination process. x. Mobile phones/ cameras should not be allowed for any staff within the printing area under any circumstance. xi. CCTV cameras must be installed and regularly audited for adequate functionality in the printing area and press vicinity. xii. CCTV recordings must be preserved for at least one year. xiii. Question papers and OMR sheets individually must be augmented with unique codes. xiv. In case of any faulty printing, the misprint copies must be secured and destroyed by the NTA, with proper documentation, rather than letting the press destroy the faulty copies.

R.16	**Transportation of Question Papers:**
	i. Courier agencies involved in Transportation/ Reverse Pick up need to be carefully chosen, with strict terms and conditions. NTA may consider Institutional arrangements with 'India Post' for such services while maintaining strict security measures. ii. Officers/ Staff/Agency wise Chain of Custody for the QPs must be predefined starting from setting of QPs to distribution at Testing Centres. iii. QP sets must be evaluated thoroughly by NTA for any misprints etc., before transportation. iv. Trunks containing the QPs must be wrapped and sealed in marquee cloth for safe transportation. v. Transportation of QPs from Treasury/ Custodian to the Testing Centre must be done via secure methods (e.g. geo-tagging, specialised locks etc.) and handover/ takeover accountability of Officers/ Staff must be defined. vi. The testing material must be delivered at the Testing Centre to the Head of the Institution/ Designated representative, in the presence of an NTA representative deployed at the Testing Centre, under CCTV surveillance, in a timely manner. vii. Material should be opened at the centre at specified times and minute-to-minute protocols for distribution, examination and collection must be strictly adhered to. viii. NTA must depute a Presiding Officer at each Testing Centre to oversee the entire test operations on its behalf. Towards this, NTA should develop a credible pool of human resources (analogous to the Presiding Officer in the Election process). ix. For identified critical operations, joint approval of the Presiding Officer, TIA representative and Head/ Designated representative of the Testing Centre should be mandated.
R.17	**Selection of Examination Centres and Seat Allotment:**
	i. Selection of Testing Testing Centres should be done duly considering the inputs provided by the District Level Coordination Committee. ii. A larger list of Government schools/ colleges may be obtained by NTA from the District level coordination committee, and centres with appropriate infrastructure should be chosen randomly using computer software. iii. Testing Centres must be chosen keeping in mind the distance from headquarters and ease of access to prevent any issues for Candidates and Flying Squads.

	iv. Testing Centres with any bad reputation for malpractices in the past must be blacklisted and should not be used for any exam. v. Allotment of seats for Candidates should be randomized. vi. Invigilator must be allotted exam hall on the day of exam on the random basis.
R.18	**Frisking at the Testing Centre:**
	i. All staff and candidates and other representatives at the Testing Centres must be frisked thoroughly, in a professional manner. ii. NTA should communicate the 'Dos & Don'ts' and 'Dress code' prominently on the admit card besides the NTA website. iii. Appropriate provisions should be made for frisking of female candidates. v. Nobody should be allowed to enter with mobile phones, digital watches, Bluetooth devices or other electronic equipment. v. Nobody should be allowed to enter with opaque pouches, opaque water bottles etc.
R.19	**Verification of Candidates:**
	i. Scanned signatures and photographs must be matched at the Testing Centre. ii. Biometric verification/ Aadhaar verification must be done at all levels: registration, Testing Centre, counselling, and subsequent admission.
R.20	**Steps to prevent Impersonation:**
	i. ID and Admit Card of candidates must be verified at the entry gate of the Testing Centre and in the exam hall. ii. Biometric data of Candidates must be matched with Aadhaar Card information (may be done offline after acquisition of biometric data). iii. Installation of CCTV cameras must be done to prevent any blind spots, and its data must be secured by the Presiding Officer and subsequently submitted to NTA. iv. There should be an appropriate deterrent clause. v. 'DIGI-EXAM' is proposed by the Committee (on the lines of 'Digi Yatra' and elaborated in **Section 6.7** vi. Post examination data analysis is a must by a third party. Data analysis report may be used for centre selection. If any anomalies are observed, a thorough enquiry should be made by NTA and necessary action may be taken accordingly.

R.21	**Un-used OMR Sheets/ Question Papers:**
	i. OMR and the question paper of absentee candidates should be collected and sealed in separate tamper-proof covers immediately after the attendance and should be submitted to NTA by the Presiding Officer with proper documentation. iii. NTA should reconcile used and unused Question papers and OMR sheets after the examination.
R.22	**Back Transportation and declaration of results**
	i. Once the examination is over, the material should be sealed in a tamper-proof manner in the presence of the Centre in-charge, Presiding Officer and TIA representative and delivered to the NTA's authorised person. ii. Strict monitoring of de-sealing and documented confirmation of Centre-wise and overall OMRs must be recorded. iii. The scanning of the OMR should start immediately, and the OMR should be uploaded to the website in a time-bound manner. iv. Candidates should be able to download their OMR image as per specified timelines provided in the information brochure. v. The provisional answer key should be announced, objections from the candidates should be addressed and the final answer key should be declared (certified by the TIA and the QP team).

6.6.3 Specific Measures for CBT

R.23	**Selection of Test Conducting/ Third Party Agency:**
	i. Outsourcing of examination procedure to a single agency must be avoided. ii. Reliance on Test delivery agencies must be phased-out by NTA in the long run through the development of in-house examination software and specialized hardware iii. Agencies providing logistical support must be hired from a pool of empanelled agencies after thorough verification. iv. Quality and Cost Based Selection (QCBS), along with Security Protocols, and other related parameters must be followed in the tendering process rather than adopting only the L1 method.
R.24	**Sanitisation of Computer systems:**
	i. Prior sanitisation of all Computer systems of all Centres for any remote access tools, parallel LAN, duplicate server, AMT chip, networking bridging tool etc. should be done by the platform provider.

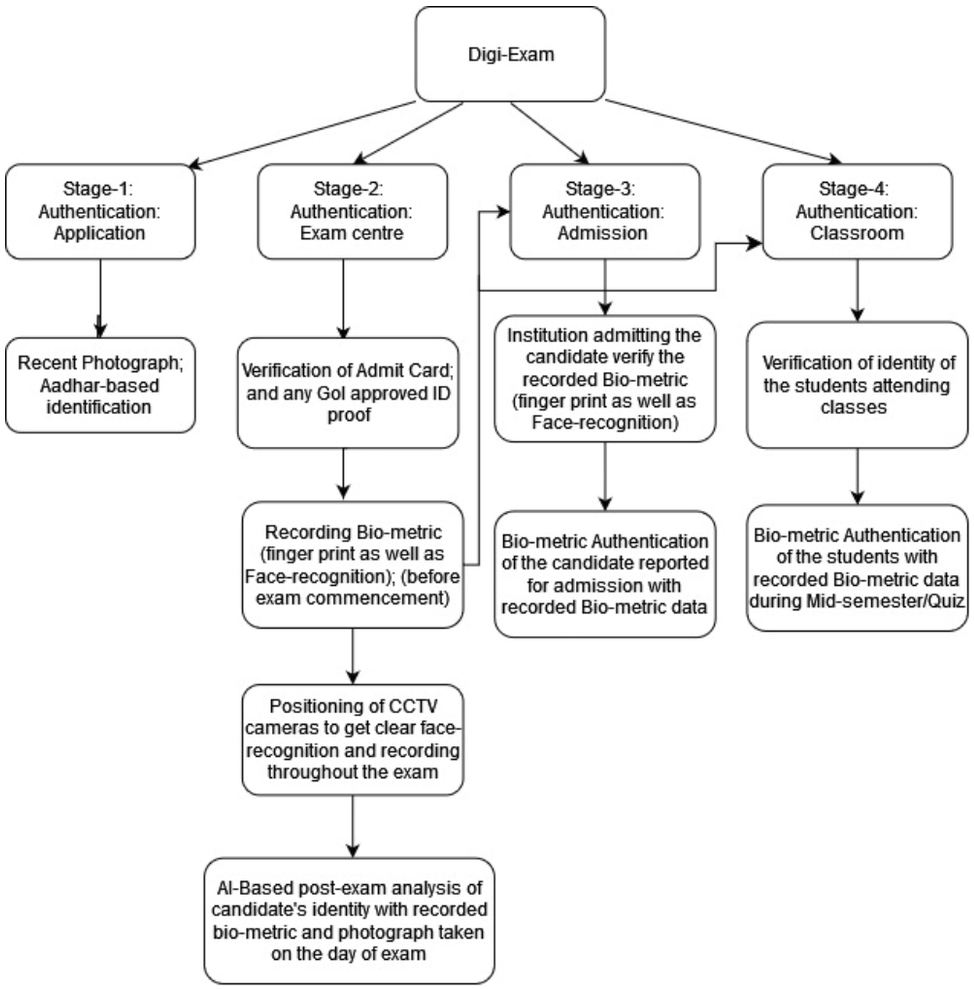
	ii. Sanitisation procedure must be cross-checked by NTA with the help of the NIC official deputed in each District before the examination. iii. Application used for examination must be subjected to independent third-party VAPT (Vulnerability Assessment & Penetration Testing) preferably by a Government Agency e.g. CERT-IN, CDAC, etc. iv. MAC IDs of all Networks must be captured during the exam. v. VPN access logs for the examination must be obtained from the Exam Conducting Agency for future audits. vi. Server security, access & system logs, audit trails and the entire database must be collected from the agency for audit purposes.
R.25	**Allotment of Seats at the Testing Centres**:
	i. Randomisation of candidates should be strictly enforced for the allotment of Centres. ii. Admit card distribution informing the centre of the examination should be done preferably 1-2 days before the examination.
R.26	**Randomisation of NTA and TIA Observers** should also be followed for the Testing Centres. Examination functionaries of the Test Conducting/ Third Party Agency should be deployed from outside the State.

6.7 Introduction of 'DIGI-EXAM' to Prevent Impersonation

Currently, each candidate must upload the data every time the candidate aspires to write the test. Using the application data to verify authenticity during the examination is insufficient. NTA caters to many TIAs, and there is a likelihood of a communication gap between the candidate writing the exam and the candidate joining the academic programme, which can lead to impersonation between the candidate appearing in the examination and the person attending the class.

R.27	**'DIGI-EXAM' system, on the lines of 'Digi Yatra' is recommended to ensure that the candidate writing the exam is the one who joins the programme. Essentially, authentication at the stages of application, test, admission/induction and study/ work are envisaged, as described below, and illustrated in Exhibit-5.**
	a) **Authentication Stage-1: Application stage**
	i. The primary data identifying the candidate should be made as a one-time entry. The NTA should ensure the candidate uploads essential and optional documentary proof of her/his identity. TIA and NTA should decide on the (a) Essential documentary proof required to be submitted online (ex: a recent

		Photograph; endorsement of identity proof by the Principal/Headmaster of the school along with a copy of birth certificate/10th standard mark sheet as proof of date of birth and name), and (b) Optional data- provision for Aadhaar verification and online authentication process.
	b)	**Authentication Stage-2: Testing Centre**
	i.	Verify the admit card details, along with the candidate's identity, with any one of the Government-issued ID proofs.
	ii.	Record biometric data (Fingerprint, iris scanning, Photographing the candidate) at the Testing Centre before the commencement of the test.
	iii.	Continuous capture of all candidates through CCTV coverage throughout the Test duration and cloud storage of data.
	iv.	Post-exam AI-based analysis of candidate's photos i) in the application form, ii) taken at the Testing Centre and ii) CCTV coverage (extracted image from the footage at every 15-minute interval). This will ensure that the same candidate appears to write the test in the assigned seat throughout the examination.
	v.	In case of discrepancy, the candidate's candidature is marked as provisional for further action.
	c)	**Authentication Stage-3: Admission at TIA's Institution(s)**
	i.	NTA should share the biometric data of candidates selected for admission with the TIA for their verification during admission.
	ii.	The candidate's recorded data should be verified with the candidate reported for admission.
	iii.	TIA stores the data shared by NTA for verification at Stage 4.
	d)	**Authentication Stage-4: Classroom at TIA's Institution(s)**
	i.	TIA should undertake a surprise biometric data of the students during one of the quizzes or mid-semester exams.



DIGIExam: Multi-stage Authentication of identity of candidates

Exhibit-5

6.8 Adoption of Computer-assisted Secure PPT (CPPT)

R.28	**To eliminate potential breaches during the printing, storage and transportation chains of PPT, the Committee recommends a hybrid process where:**
	a) the processes of CBT will be adopted till the encrypted Question Papers are delivered to the Confidential Servers of the Testing Centres,
	b) the printing of Question paper will be done at the Testing Centre, with due confidentiality, using High-Speed Printers,
	c) distributing Question papers to the candidates as in PPT.

R.29	**The processes for Computer-assisted Secure PPT (CPPT) are elaborated in Exhibit-6. Pilot testing of this process should be undertaken before its operational induction.** **A variant of this could be a model where delivery of question paper can be done through CBT model to each candidate, and OMR sheet can be used for answer collection. This model will also help to reduce vulnerability of both CBT & PPT.**
	Exhibit-6: Operating Details of Computer-assisted Secure PPT (CPPT) • The NTA must set up high-speed printers, with assured annual maintenance. • Encrypted QPs, which are randomised for each candidate with their roll number and photo) can be sent to the centre's server (like the CBT mode), which is connected to networked High-speed printers (which can print, sort and staple the QP). • The printing is done in the pre-identified local and secure control room (with local state admin- police, NIC officials, Observers, and centre head). Each candidate's QP can have the same random shuffling of questions and MCQ choices as for the CBT. Indeed, the CBT and PPT QP can be the same for each candidate. The mode of exam is immaterial. • A typical centre with 500 students will need 500 QPs to be printed. Each QP may have 12-15 pages. Even compact professional printers can print 40+ pages per minute, i.e., 3 QPs. In an hour, such a printer can comfortably print 150 QPs. • While the printers can be installed and tested in the control room well in advance, QP can be printed on the exam date (with sufficient margin for printing and distributing QPs before the start of the exam) by connecting the server to the networked printers or by any other secure mechanism. • The OMR sheet can also be printed for each candidate along with the QP, with the candidate's photograph. • After the exam, the OMRs can be scanned in the control room of the centre itself by placing a scanner there. Once the OMRs are scanned and uploaded to the server, the possibility of tampering with the OMRs enroute to the NTA is also ruled out.

6.9 Trusted Question Bank and Vibrant Expert Pool

R.30	Guidelines for Question Paper Setting and Vetting	
	a)	Question Paper Setters/Vetters are experts drawn by TIA, who draw input from their long-gained assimilated knowledge. They need a vast resource of subject collections so that the questions are not repeated and drawn with different difficulty levels. NTA should create an extensive resource library catering to each subject area, covering the text books and reference books written by various authors. These resources may include text books prescribed by the university systems/school education systems, but they are not limited to these alone. MCQ-based books should not be procured for the library. New books need to be added to the library regularly. The resource library must be updated periodically to adhere to the up-to-date syllabus.
	b)	The QP/QB Setters and Vetting Team (provided by TIA) will draw insights from past QPs (within the syllabus coverage) and create new QPs, preferably focused on testing conceptual understanding and applications. It is to be ensured that questions created will have uncontested answers. None of the QB/QP Setting/Vetting team members will be required/permitted to bring in their books/resources. The QP setting team creates two or three Question papers for each session. In the case of multiple sessions, separate teams set the required number of sets for each session.
	c)	All questions in the created QPs must be ORIGINAL – this is the Intellectual Property of TIA and is in the custody of NTA until the complete examination processes are over. NTA takes responsibility to protect the same.
	d)	NTA should develop quantitative models for types of Question Papers aimed at generating reliable ranking/grading results, such as how many questions, what kind of questions, marking scheme of questions, total marks, weightage of different questions, etc. Before each question-setting exercise, NTA can ask TIA to select one of the models to prepare question papers. Applying multiple models of Question Papers may also assist in controlling robotic practices by many coaching centres.
R.31	**Guidelines for Empanelment of Confidential Operations (CONOPs) Teams**	
	a)	TIA must be the 'intellectual' stakeholder along with those appearing for the Examination. Hence, the TIA must coordinate Question Paper setting/ Question Bank preparation by drawing from the best internal expert resources available to the TIA. Regardless of whether a QP or QB is prepared, the 'final' view, in the form of a QP that will be visible to candidates, must be certified by a team of Chief Paper Setter and Chief Paper Vetter. A written undertaking is required from TIA that all QPs provided are Examination ready.

	b)	TIA should draw subject experts nationwide for Question Bank Creation/ Question Paper Setters. Using a fixed panel of experts will neither bring in variety in the selection of questions while bringing in monotony and fatigue nor will it allow growth in the pool of trained experts adept at setting desired Question Papers.
	c)	It is the responsibility of TIA to identify specific paper setters (5-7 per paper, of which one is the chief paper setter as final authority) and Vetters (3-4 per paper, of which one is the Chief Paper Vetter to assist the Chief Paper Setter). At least two Setters/Vetters should possess adequate Hindi knowledge and ensure that papers in Hindi and English are identical. Similar practices must be adopted for QPs in desired Indian languages. It is advisable to choose experienced and academically oriented senior teachers who have handled the classes concerning the syllabus for this task.
	d)	The Chief Setter/Chief Vetter is chosen based on her/his experience in previous CONOPs and performance as a taskmaster and team player who can ensure adherence to defined protocols by the team members.
	e)	Each Setter/Vetter in CONOPs must sign a “No-conflict of interest agreement” (i.e. not involved in coaching, close blood relative is not writing the exam, etc.) and a “non-disclosure agreement” regarding the CONOPs material (QP/QB, templates etc.) as it is the Intellectual Property of the TIA.
	f)	Setters/Vetters preferably should NOT operate in their city of residence. The coordination of travel operations for paper Setters and Vetters is to be done by NTA in consultation with the TIA.
	g)	NTA must efficiently manage the travel, TA/DA disbursals and the associated logistics.
	h)	It is essential to protect the identity of the QP/QB setting/vetting team, as well as the nature of confidential operations carried out by the Setter/Vetter.
R.32	**Guidelines for Confidential Operations Rooms**	
	a)	The confidential operation room should be secluded from the main corridor. The room’s walls should be acoustically insulated and not contain transparent glass. The room needs a vestibule through which the QB Creators/AP Setters enter.
	b)	The room should be self-contained with a book/resources storage space for each Question Bank Setter, a pantry area with a refrigerator, microwave/ induction stove, cutlery for making coffee/tea, and refreshments. The vestibule is where the QP Setters/Vetters/QB Creation Team leaves all their personal

	belongings, including their cell phones, etc. This will prevent staff from entering the room frequently for serving. The team maintains the lock and key of the rooms till the end of CONOPs. Each room should be provided with a paper shredder. After the process, the same lock should not be reused for CONOPs. Housekeeping operations are to be done in the presence of the CONOPs team. NTA must get input and suggestions from TIAs for their CONOPs setup. TIAs must eventually approve CONOPs venues provided by the NTA.
R.33	**Protocols to be followed by the Question Paper Setters/Vetting Team are given in Exhibit-7.**
	Exhibit-7: Protocols to be followed by Question Paper Setters/Vetters Teams i. Each member of the CONOPs team must keep the appointment (as setter/ vetter) strictly confidential. ii. The team must ensure security and confidentiality during CONOPs until the whole exam life cycle is completed. iii. The team should not bring laptops, iPads, mobile, pen drives, or any other electronic gadget/device into the CONOPs room. All personal belongings are to be stored in the specific storage space provided in the vestibule. The CONOPs room should not have internet facilities. iv. No other person except the authorised CONOPs team will be permitted to enter the designated CONOPs room. All the team members should be present during the mutually agreed daily schedule. v. After the day's work, the room should be locked and sealed by the Chief Paper Setter/Chief Vetter and another team member. The Chief Paper Setter/Vetter will retain the key. None of the CONOPs material should be left on the table after completing each day's work. The team members should shred the working sheets, rough work, etc., daily. vi. No member should schedule or participate in external activities (personal/ academic/professional) during the CONOPs. It is the responsibility of the Chief Paper Setter/Vetter to ensure compliance. vii. Each member of the CONOPs team takes the responsibility for creating error-free Question Papers. viii. The team should note that the approved Question Paper and answer key will be released to the public only after the Exam. The team should be prepared to defend any clarifications/ ambiguities that stakeholders raise. The team should also prepare a detailed unique answer key with possible alternate solutions leading to the identified correct response. The team should justify the chosen distractors (incorrect options) for each question.

	ix.	The difficulty level of questions and the Question Paper as a whole should be discussed based on the established norms, the number of questions and the duration of the Examination, according to the template chosen by the TIAs.
	x.	The team should ensure that the Hindi translation is correct and unambiguous. For the correctness of Hindi terms, the team should use the Comprehensive Glossary of Technical Terms of Science, Vols. I and II, Central Hindi Directorate, Ministry of Education, New Delhi. The same applies for questions in desired Indian languages.
	xi.	CONOPs are considered fully concluded only after a team of Chief Paper Setter and Vetter uploads the Question Paper contents onto the final examination consoles/software (i.e., content uploading) and certifies that the post-content-uploading, the examinees' view has been fully inspected for each question thoroughly along with the instructions, in all languages. It is important for them to see the examinee's view and ensure that superscripts, subscripts, equations and images are correctly transferred into the secure question delivery framework.
	xii.	In case of multiple languages outside the Chief Paper Setter's and Vetter's expertise, the language expert must certify that "No third party or press has seen or even seen the marking scheme, number of questions, types of questions, or actual content of questions."
	xiii.	The Head of TIA and the Head of NTA will jointly decide which Question Paper will be released from the Sets of Question Papers for each session. In the case of using a Question Bank, the secure question delivery framework takes care of the randomisation of paper as per mutually agreed protocol between the TIA and NTA.

6.10 Secure and Trusted Testing Platforms

R.34	**Secure Storage of Question Papers at the Command Centre**	
	a)	Computer Infrastructure • Servers and Data Centres: High-capacity servers and data centres handle large volumes of data and ensure smooth operation. Data centres house the servers and other critical IT infrastructure. They must be designed with robust physical- and cyber-security measures, including controlled access, surveillance systems, and secure entry points.

		Network Bandwidth: • Robust internet connectivity with high bandwidth to support simultaneous access by millions of users. Backup Systems: • Redundant systems and backup servers to prevent data loss and ensure continuity in case of failures.
	b)	The QP is created at the CONOPs centre(s). The QP/QB must be formatted for uploading to the secure digital platform. This is done at the command centre, which is equipped with software support that helps create questions digitally and allows randomisation of questions along with options.
	c)	Questions, once formatted, must be stored in an encrypted manner on a master computer. The password or the encryption key for the question paper is only known to a select few top command centre officials.
R. 35	**Secure delivery of Question Paper from Command Centre to Testing Centres**	
	a)	Steps involved in the secure transmission of QPs are deemed to be confidential and sensitive. Details are provided in the Main Report.
R.36	**Precautions for Encryption**	
	a)	The cryptographic algorithms that are used in the question delivery framework and for exchange of answers and audit files, should be up-to-date. Details are provided in the Main Report.

6.11 Secure Testing Centres: Configuration and Infrastructure

R.37	**The Committee recommends that every district in the country (except very thinly populated ones) must have at least one Testing Centre that can conduct PPT/CBT/CPPT and more based on the demand.**	
	a)	Mobile Testing Centres ***(elaborated in 6.12)*** could be deployed for thinly populated Districts.
	b)	Ideally, the candidates should get a choice of Testing Centre in their own District of residence.
R.38	**NTA may target developing at least 1000 Secure Testing Centres in the country, in a phased manner, in reputed Government institutions.**	
	a)	Location and Access: Testing Centres should be strategically located to ensure easy access for all candidates, including those in remote areas. They should be well-connected by public transport.

	b)	Space Requirements: Each centre should have sufficient space to accommodate optimal number of candidates while maintaining comfortable seating arrangements and ensuring adjacent candidates cannot see each other's monitors.
	c)	Power Supply: Uninterrupted power supply with backup generators should be made available to avoid disruptions during exams.
	d)	Technical Support: Providing 24/7 technical support through call centres and online chat to resolve any technical problems.
	e)	Candidate Support Facilities and Amenities: i. Proper ventilation, climate control, and ergonomic furniture to ensure candidate comfort during the exam. ii. Ensuring availability of proper time synchronised clocks in the examination halls and proper arrangements for giving instructions to candidates. iii. Help desks at examination centres to assist candidates with any emerging health issues, etc. iv. Ensuring the availability of accommodations for candidates with disabilities, such as screen readers and adjustable workstations. v. Lockers for the safekeeping of candidate mobiles and other small items that are not allowed in the exam halls. vi. Waiting area for Parents/Accompanying persons: Proper waiting area, with shade and drinking water facility. A canteen for food/snacks is also desirable.
	f)	Computer Systems: Equipping centres with sufficient computers (including backup computers), each meeting the required essential technical specifications. The software (operating system and other services) running on these computers should be controlled by the main server, and only whitelisted software/firmware should be allowed to run. Communication should be restricted to whitelisted connections only. Details are provided in the Main Report.

6.12 Mobile Testing Centres for Rural and Remote Areas

In a vast and highly diverse country like India, technology penetration and accessibility remain uneven and limiting, while they have enough aspirational students with eagerness to participate in National Common Entrance Tests. Test takers from many rural and remote areas spend enormous amounts of personal resources to reach Testing Centres in big cities and towns to take their entrance tests.

R. 39	**The Committee recommends 'Mobile Testing Centres' to facilitate the aspirational candidates from rural, remote, and thinly populated areas (e.g. North-East, Northern Himalayan States, Andaman Nicobar Islands). The Technology that renders this into a reality already exists with us**	
	a)	**Mobile Testing Centres:** A typical large bus seating capacity ranges from 40-50 persons per bus. It is possible to seat 30 exam takers with sufficient inter-seat separation in such a bus. A fleet of 5 such buses, well equipped with 30 Laptops per bus, two servers per fleet, adequate power supply arrangements and stable internet connectivity with booster antennae placed into the fleet serves as a Test centre equivalent for about 150 test-takers. We consider this as a Single Test Center (STC) equivalent that is an operational "Mobile Testing Centres".
	b)	The Committee recommends that a few (about 5-10) STCs may be set up on a PPP mode dedicated to the National Common Entrance Tests and other tests. The demand for nationwide testing is likely to go up in the coming years, and therefore, STCs might be in high demand throughout the year.
	c)	These STCs may also serve the purpose of Digital Literacy Training Centers (DLTC) for students in remote areas of the country. DLTCs could act as drivers towards Adult Literacy Campaigns, especially in the context of Digital Literacy across the country, spreading awareness for Skilling/Woman Empowerment/ Rural Employment Generation, etc. Well-run STCs could thus be the vehicles for change in far-flung areas of the country. Therefore, the investment in STCs is worth the gains it renders in the long run.

6.13 Grievance Redressal Mechanism

R.40	**NTA must have a Grievance Reporting and Redressal Cell (GRRC) that stakeholders could approach. The cell must be equipped with AI/ML-based Technology power to quickly assess and provide a response to the stakeholder query/complaint within a reasonable time frame.**
R.41	**The NTA portal must have a 'Frequently Asked Questions' and their specific answers' section. Wherever possible, AI/ML-based "interactive bots" should be put in place in the portal so that the test-takers receive clarifications in the language of their choice for various queries that arise dynamically. It is possible to train the bots through AI modules to cover a very large repertoire of queries that will benefit the stakeholders.**

R.42	**Grievances that require deeper analyses must be referred to a committee that will address the queries promptly and within a specified timeframe. NTA must keep a pool of experts who could be called upon to serve as committee members in demand. To address the queries on time, a few committees may have to be judiciously activated in parallel. All the committee decisions must go through a proper "vetting" process in NTA before their decisions are conveyed to the aggrieved party**.

6.14 Mental Health Support to Students

Generally mental health wellness remained on the margins of the general discourse for several decades. Notably, mental health support for students has now been recognised as one of the most crucial aspects of the overall preparedness and performance of the students, in general, and particularly the participating examinees. The Committee acknowledged the steps taken by Ministry of Education to promote well-being of students. The Committee has observed it as one of the mainstream concerns that needs to be addressed to make our approach holistic.

R.43	Recommendations on Wellness-Related Changes in Testing System
	i. A Cell in NTA to focus on mental health issues related to high-stakes exams. ii. Tele-helpline for students (young people find it difficult to seek help from usual sources). iii. Monitoring and evaluation system for critical information on education and assessment anxiety (e.g., audit of calls received at helplines (such as Tele MANAS) related to education and assessment (data points could include the proportion of young people, the proportion of young people with problems related to school or education, the proportion of young people with exam stress; the above data segregated by age and gender). iv. Monitoring of Education-related media discourse (around assessment preparation, exam results and school life). v. Feedback from students, parents and teachers (e.g. as done by Manodarpan Cell) vi. Campaigns to reduce exam stress (e.g., through print media, creation of social media platforms, and celebrity endorsement). vii. Psychometric questions on text anxiety and inputs from students during the formative (trial) assessments and actual tests. viii. Development/ adaptation of test anxiety psychometric instruments for use in the country. ix. Accommodation for those with benchmark learning or mental health disability, e.g., provision of extra time and less stressful test rooms (e.g. away from other students).

R.44	**Recommendations for Reducing Exam Stress**
	i. Shift to computerised adaptive testing with calibrated questions (including balance of difficulty level): anytime, anywhere exams within a window period, allowing for rescheduling. ii. Opportunities to improve (exams at more than a one-time point) iii. Cap on the number of exams (e.g. four attempts) iv. MCQs are arranged in sequential order of difficulty, and topic groups v. Trial assessments (simulating test format, test environment) vi. Learning resources vii. Guidance to parents viii. Grievance cell for early redressal of grievances ix. Curriculum control: prior knowledge of curriculum, e.g., marks distribution for topics x. Relaxed time limits for taking tests xi. Early intimation regarding the town of examination xii. Scheduled dates for results and counselling
R.45	**Recommendation Regarding Coaching Centres**
	i. A suitable oversight mechanism may be considered for Coaching Institutes because they impact test anxiety due to the time and money students invest in them. *(Also see R.55)*
R.46	**Recommendations for Training Teachers**
	i. To use fear appeals less often. ii. Help students set achievable goals dynamically (step-by-step) over the year to help motivation. iii. Creating positive learning environments (focusing on students' abilities and strengths rather than weaknesses, giving positive and accurate feedback, encouraging cooperative rather than competitive relationships with peers, encouraging intrinsic motivation to study rather than focusing on the stakes of the assessment, delivering content in an applied manner to deepen understanding, encouraging enthusiasm and positivity around subjects). iv. Creating a support network (peers, parents and teachers).
R.47	**Recommendations for Sensitisation Programmes for Parents**
	i. Parental support. ii. Reducing unrealistic expectations. iii. Utilising positive (valuing good study habits, positive home-school relationship) rather than aversive (avoiding coercion to encourage academic behaviours) approaches. iv. Balancing chores and studies.

R.48	Recommendations for Training Students
	i. Aptitude testing and career counselling (with parent involvement and sensitisation). Aptitude testing can help students understand their strengths, weaknesses, and potential for different career paths. Career counselling can help students (with support from parents and teachers) to make informed decisions about their careers and lives. ii. Psychoeducation: Providing information, education materials, or advice about test anxiety covering causes, effects and characteristics of test anxiety and its normative nature
	iii. Academic skill-building (preparedness reduces anxiety): Effective study habits (e.g., focusing on one task rather than multi-tasking/ switching between tasks, time management, being task-oriented, discussing subject content with peers); appropriate environment: minimise distractions (e.g., less use of mobile phones); Test-taking skills: time management, coping mechanisms for difficult questions, reviewing answers. iv. Cognitive-behavioural practices: Worrisome thoughts (e.g., of poor performance or social evaluation) and problematic expectations are addressed through cognitive restructuring, mindfulness, and relaxation (e.g., deep breathing, progressive muscle relaxation).

6.15 Social Inclusiveness and Developmental Initiatives

Nationwide Admission Tests, both in CBT and PPT mode, pose significant challenges to students, especially from socially disadvantaged groups and those belonging to deep rural backgrounds. Both groups of students face the first-time exposure challenge in these High-Stake Examinations (HSE). Even a well-educated student from a hinterland of the country can get “disoriented” enough not to perform well in an HSE, given the nature of uncertainties associated with the process.

6.15.1 High Stake Examinations (HSE)

Therefore, the design of HSE must ensure “all-inclusivity”, “fairness/transparency”, and a reasonable extent of visible “level playing” in the competition across our highly diverse society.

The following suggestions, when implemented, might mitigate their challenges:

R.49	**The schools must provide effective and periodic orientation sessions to these students. The orientation sessions must play a very proactive role rather than fulfilling simple procedural needs. A prior exposure to the mode of multiple-choice question papers, the varying degree of difficulty associated with such questions, the time-management skills for answering such MCQs, associated English language barriers, if any, etc. are to be keenly focused in these orientation sessions. At least four orientation sessions per year be conducted on Saturdays by experienced teachers, and it is important that the host institutions ensure high participation levels of students.**
R.50	**In addition to mitigating the anxiety and fear associated with such HSEs in students' minds, the larger purpose of such sessions is also to generate interest and enough competitive spirit in their minds towards succeeding in such HSEs. These are also to be treated as confidence-building and stress-relieving sessions so that students build enough inner mental capacity to face challenges associated with plausible failures in HSE.**
R.51	**There are different challenges in PPT versus CBT modes of HSE tests. In the orientation sessions, the students must be made aware of both challenges and their respective remedial approaches to deal with them. They must also be alerted to futuristic modifications of CBT and PPT models that could be adaptive and more efficient. Such training sessions must continue to facilitate inclusive participation across the country at scale.**
R.52	**User-friendly and illustrative types of pre-made video recordings must be designed by NTA and made freely available for students to go through and perform mock-testing trials of HSE. End-to-end coverage of the process in the mock video session, ranging from the application submission step to the results declaration of HSE, will help the students (test-takers) familiarise themselves with the entire examination cycle and understand its nuances and challenges. Mock-testing trials by the students in such video sessions will enable them to acclimatize to the Testing Centre/test paper environment and deal with associated time management challenges and various "do's and 'don'ts" to be followed in examination sessions, etc. Therefore, the pre-recorded video sessions must be professionally prepared, detailing as many steps as possible in a lucid and easily understandable illustrative format.**

R.53	**Such pre-recorded mock-test video sessions must be made available in all languages in which the admission tests are conducted nationwide, would help to overcome language-related barriers in the system fully.**
R.54	**When the stakeholders fully understand the processes involved in HSE, a certain level of comfort feeling arises in them that HSE may eventually start "de-staking" itself, which is a welcome change for a large and diverse society such as ours. Eventually, we need to transition from HSE to Low/No Stake Examinations, which stakeholders enjoy going through and succeed well.**

6.15.2 Coaching Centres

As the nationwide admission tests have become 'high-stakes' examinations, the test-takers are following additional methods of getting themselves trained for the examinations.

As coaching classes get increasingly more structured into parallel-educational models for students, current data also indicates that the high-school education system has taken a 'hit' with decreasing levels of physical participation of students in school classes.

All such changes where 'High Stake Examinations' (HSE) have taken centre stage have impacted how the students view Education *per se*, namely knowledge *vis-à-vis* content, learning/understanding *vis-à-vis* scoring in the exams, reading text-books *vis-à-vis* solving MCQs through guides/notes and other such resource material, etc. The entire landscape of the student learning process has been transformed due to emphasis on MCQ-based problem-solving methods. As the country's youth gets more aspirational and competitive, their participation and the associated stakes in such examinations will likely get even sharper soon. Therefore, the Nationwide HSE will surely keep attracting the country's attention.

R.55	**It is suggested that either State or Central Government may devise suitable oversight mechanism(s).**

6.16 Stakeholder Engagement and Communication Strategy

Nationwide Combined Entrance Test (NCET) operation primarily involves THREE stakeholders: 1. All the parties involved in conducting/managing NCET (***Test Managers***) (NTA, TIA, Vendors & Service Providers and Test-Centre & associated city police-intelligence administration apparatus) 2. ***Test takers*** (Students) 3. ***The public*** at large who observes the process from a distance.

Amongst the above three, students are the primary stakeholders whose STAKES are high and critical in their career. The following measures need to be put in place around stakeholder engagement and communication:

R.56	**There must be effective operational communication within various components of *Test Managers*. Detailed SOPs and compliance mechanisms are to be put in place. The public at large and the students must FEEL & SENSE the operational robustness in the *Test Manager's* function on the ground.**
R.57	***Test takers* must be made familiar with all details related to the mode of the exam (Exam cycle, CBT or PPT; Format and marks details of QP; Testing Centre details and its allocation on time, etc.).**
R.58	**Lack of providing timely-authentic information results in stress for the Test Takers. Hence, the NTA website should be made a dynamic, comprehensive, user-friendly information source for candidates taking exams conducted by NTA. It should necessarily include:** i. The website should be made "accessible". ii. Language-specific micro-sites need to be set up on the NTA website. Queries related to each test held in multiple languages must be addressed in the respective language. iii. Details about NTA (mandate, exams conducted, Organisational structure, Annual reports, etc.) iv. Mock Tests should be made available for each test conducted by NTA v. Video tutorials should be created to guide each step of the test cycle. vi. It should be a "one-stop access point" for application submission, test schedule updates, test schedule syllabus, Testing Centre allocations, facilitating download of admit cards and test results display. vii. Along with learning aids covering the test syllabus as recommended in R52 and R53 above, previous question papers with detailed solutions should be available to the candidates. viii. Provision for candidates to submit queries through the website should be available, and a dedicated team should respond to the candidates expeditiously. ix. NTA should create an 'FAQ' for each test, and this should be continuously updated based on the learning occurring through responses made to candidates for their queries.

6.17 Comprehensive Training for Testing Teams

R.59	**Nationwide Entrance Tests involve large testing teams that function in a concerted manner involving multiple stages of the process. QP Setting/ Vetting teams are crucial in their ability to efficiently adapt to changes in QP testing/evaluation methods that evolve dynamically. On the other hand, Technology-implementing teams heavily rely on technology-savvy human resources in the wake of rapid platform changes.**	
	a)	QP setting involves multiple nuanced areas: Designing Questions that vary in the degree of difficulty in a graded manner, realistic calibration of the associated gradation in difficulty levels, ensuring uniformity in the range of gradation across multiple subject streams, a sufficient level of clarity among MCQ answers that leads to no ambiguity in the choice of answers, avoidance of options that are partially correct etc. Some of these issues could pose very serious challenges while designing Questions in Social Sciences, Humanities and other non-STEM areas.
	b)	Moreover, in this rapid rise in multidiscipline, the examination syllabus content is also undergoing drastic changes. The conventional compartmentalised domain expertise model is rapidly falling apart. All such changes that are currently taking place in the education ecosystem are reshaping not only the teaching pedagogy but also the assessment methodologies very significantly.
	c)	One could easily conclude that it might be difficult for an untrained QP setter to navigate such a complex maze well enough. There is a need for frequent training and orientation sessions for beginner QP setters.
	d)	It is imperative to evolve and implement robust training and retraining sessions for human resource “regeneration”. The quality and quantity of human resources need constant reshaping in both their skill content and thinking styles.
	e)	When too many things change too rapidly in a system, the level of expertise that is readily available and required for the optimal functioning of the system becomes limiting. The steady-state level of required expertise drastically falls. This is an acute problem in the system now.
	f)	Large-scale testing agencies fall into such a category of human resources where quality manpower crunch arises rather frequently. These agencies may have to reinvent themselves constantly via training and retraining mechanisms.

R.60	**Use of Technology is increasing in the examination process; therefore, it is necessary to train and update all stakeholders deployed at several levels so that they can understand, identify the challenges and prevent potential breaches.**	
	a)	NTA should prepare a yearly training calendar and organize training by inviting experts from the Administration, Police, IT experts, and Academicians from IITs, IIMs, CUs, etc. Every person should undertake training before deployment for any duty, especially related to Testing Centre management. Officials involved in the examination system and indicative areas for training is given at Exhibit 8.

Exhibit-8: List of officials and indicative areas for their training is mentioned

1. NTA official

- **Headquarters Officials**
  - End-to-end examination process, stakeholders involved, and challenges
  - Examination strategy by experts of IITs, UPSC, SSC etc.
  - New technology and possible ways of breaches
  - Challenges in the transportation of question paper
  - Legal issues and Public Examination (Prevention of Unfair Means) Act, 2024
  - Coordination Mechanism with State machinery
  - Communication Strategy during examination
  - Emergency response mechanism
- **IT Team**
  - New and emerging technology for conducting examination
  - Cyber Security training by experts from I4C, CERT-IN, CDAC etc.
  - Training to identify any possible vulnerabilities in Hardware (equipment), Software (testing platform, operating system or malicious applications) and Network (secure VPN, LAN, restrict remote access).
  - Verification process of Security terms and conditions of software of testing agency (third party)

- **Communication Team:**
  - o Effective Communication with all stakeholders
  - o Communication with Test Management Teams, District response team
  - o Prevent/counter any misinformation pertaining to the examination
- **Emergency response Team**
  - o SOPs to address any situation related to paper leak, use of Unfair Means
  - o Coordination mechanism with State- and District-level response teams for appropriate action with relevant stakeholders in case of any breach
  - o New laws enacted by the Government of India to prevent paper leak
- **Monitoring Team**
  - o Use of technology especially AI to detect Unfair Means
  - o End-to-end examination system and involvement of multiple agencies
  - o Potential breaches and counter measures
  - o Regular Interaction with State and local administration to take regular counter measure against organized groups involved in paper leak
  - o Post-examination CCTV data collection and further steps
- **Grievance Redressal Team**
  - o End-to-end examination process and issues related to students
  - o Efficiently address any grievance before, during and post examination
  - o Stakeholder coordination to address all grievances in a timely manner
- **Research and Development Team**
  - o Regular interaction with research institutes such as IITs, IISc, IISER, ETS, etc., for the use of new technology
  - o Interaction with Police officials to understand new methodology adopted by individuals involved in paper leak/ Un-Fair Means (UFM)
  - o Training by other exam agencies such as UPSC, JEE advance, ETS
  - o Interaction with Intelligence officials, Cyber security experts

2. Testing Centre Management Officials

- **TIA Representative**
  - Testing Centre Management Manual
  - Roles and Responsibility of TIA Officials
  - Challenges of PPT and CBT examination
  - Foreseeable breaches in PPT and CBT exams
- **NTA Representative**
  - Coordination mechanism with NTA HQ
  - Roles and Responsibility of NTA Officials
  - Challenges of PPT and CBT examination
  - Task to be performed by third-party agency
  - Training to identify any potential breach at the centre

Test Agency Representative

  - Training to conduct deep sanitization of all IT equipment
  - Coordination mechanism with NTA
- **Testing Centre In-charge and support staff**
  - Access and availability of all amenities, especially for PwD candidates
  - SOPs for coordination with all centres representative stakeholders
- **District Administrative Representative**
  - Logistic Management and Security Protocols
  - Testing Centre Management protocol
  - Public Examination (Prevention of Unfair Means) Act, 2024
  - Monitoring mechanism to prevent any breach
  - Coordinate with the District Command and Control Centre and Emergency Response Team
- **Police Officials**
  - Safety and security of the Testing Centre
  - Examination Management Protocol
  - Logistic Management

- **Monitoring Agency**
  - o Identification of students through the latest technology
  - o Installation of CCTV and identification of black-spots
  - o Vigilance mechanism
  - o Counter-measures during examination
  - o Post-examination analysis
- **Invigilators**
  - o Compliance with SOP for conduction of examination
  - o Identify any attempt of malpractice (at individual, group or centre level)

3. Testing Agency Officials

- o Testing Centre Management procedure
- o Task to be performed by Contractual person
- o Coordination with NTA and District Administration

4. District Administration

- **District Officials**
  - o Identification of Testing Centre
  - o Logistics Management
  - o Security Protocols
  - o Foreseeable breaches
- **NIC Official**
  - o Deep sanitisation of Testing Centres
  - o Challenges of CBT examination
  - o New and emerging technology used for paper leaks/ Unfair Means (UFM) such as parallel LAN, remote access, duplicate server, modified hardware/software

6.18 Suite of Standard Operating Procedures and Check Points

Pre-examination preparations, especially Confidential Operations (CONOPs), form the 'heart 'of any examination system. With good pre-examination preparations, the chances of mishaps during examinations are minimised. Thus, below is a draft of the 'Blueprint' for pre-examination preparations.

These are broad guidelines for developing SOPs. While highlighting the purpose and importance of steps requiring thorough SOPs and various considerations/parameters, including possible variations in different steps that may depend on specific examinations, the following also provides parameter variations for different steps, allowing flexibility in customising examination-specific SOPs.

SOP-1:	**Annual schedule or timetable of examinations**
	• The annual schedule or timetable of examinations is to be fixed and announced at least 6 months in advance. • NTA should upload the examination schedule for a given calendar year. This will allow examinees to plan their annual calendars. • Last-minute changes should not be made except during natural disasters, emergencies, etc. • The TIA must be invested in creating selection or elimination examinations based on the curricula and in the design of quality QPs. • **Question paper patterns can significantly lower the stakes in examinations, such as (i) the spread of ranks based on a single incorrect answer, (ii) adaptive testing, etc.**

SOP-2:	**Confidential Operations (CONOPs)**
	• TIA should develop an SOP for CONOPs covering **Question Paper Pattern – Total duration, marks, marking scheme, types of questions, number of questions in every type, the expected distribution of results based on marking scheme, etc.** • Possible good impacts of frequent question paper pattern changes: i) May weaken the stronghold of robotic practices in "coaching centres", ii) Provide a surprise element for students to enjoy creativity in examinations, iii) Will allow TIAs to develop educational models appropriate relevant to their intended selection/elimination criteria, and iv) Proper patterns and marking schemes assist in lowering stakes in examinations (e.g., falling of ranks/ scores by large numbers with a difference of just one mark or one question), v) It may increase stress on students dependent on robotic practices. The following steps enhance student-friendly measures in examinations and mitigate perception-based impacts of modifications in specific protocols and procedures – • Mock and practice tests and/or questions are to be made public by TIAs on their dedicated portal, independent of NTA. • Proper data analyses of examination results are based on actual results when deciding whether a pattern remains or is modified or not utilised in the future.

SOP-3:	Creation of Error-Free Question Paper/ Question Bank
	• NTA currently does not have a dedicated 'confidential' and 'appropriately configured' place/space to host such CONOPs. • Specifying detailed requirements of Question Setters + Vetters: (EX: must be closely associated with regular teaching and/or evaluation activities relevant to the examinations). This domain experience counts. • Intellectual property is the sole responsibility of TIA since it is not feasible for NTA to have domain experts employed in every subject (e.g., ~100 currently in UGC- and CSIR-UGC- NET). • Maintaining travel logistics and confidentiality of the identity of those involved in CONOPs, which is crucial. • NTA will explicitly develop a financial model for accommodating CONOPs operations, including suitable honoraria. • NTA will have a separate "central" travel and hospitality section to cater to the calendar of CONOPs for various examinations. The "central" section may have "zonal" sections if required • Confidentiality via NDAs to be signed within TIA and with NTA. • TIA and NTA must sign an MOU for each examination detailing the terms and conditions.

SOP-4	CONOPs: Content creation in multiple languages
	• TIAs to identify only those multiple languages in which they have proper translators and Vetters for the created content. Given the policy of NEP-2020 where Regional Languages are getting mainstreamed, there is a need for TIAs to enlarge their language expertise in due course. • Intellectual property is the sole responsibility of TIA since it is not feasible for NTA to have domain experts employed in every subject (e.g., ~100 currently in UGC- and CSIR-UGC- NET). • Provide students a chance to take the examinations in the language they are comfortable with. • Technical expertise may not be available with TIA in multiple languages. • Simply using technology tools (e.g., AI or ML) is not completely feasible since it may change the meaning/interpretation of the questions based on local dialect (e.g., in English, the examinee "takes" examinations, whereas in Hindi, the examinee "gives"). TIAs need to acquire local language expertise whose expert intervention is needed to reduce machine translation errors.

SOP-5	Timely announcement of examinations and Aadhar based data collection from the candidates
	• Timely collection of candidate data is required for examination – Aadhaar is mandatory. • Computerised verification and/or flagging of candidate data for redundant, duplicate, suspicious cases from previous two years' data • Candidates should be encouraged to apply for Aadhaar since the Aadhaar data will be used for all stages of identity authentication. • The examination portal may provide a direct link to the Aadhaar application procedure.

SOP-6	Finalisation of Testing Centres
	• A significant local connect of national examinations conducted by NTA will be achieved by the involvement of the NIC officer of every District. • Only properly sanitised, well-equipped and reliable centres are to be finalised. • Readiness of both infrastructure and human resource requirements of centres to be ensured well ahead of time. • NIC officers of every District are to be directly involved as co-responsible authorities for maintaining local centre logistics. Every district to have at least one centre with a minimum capacity of 200 examinees for each examination-session. • Number of centres per district may vary depending on local conditions. • Candidates are to be allotted centres either within their preferred district OR within 200 km of their preferred choice. • The number of examination shifts may vary in a district depending on the number of centres that can be made available.

SOP-7	Assignment of Extra-Proctoring human resources by the TIA to individual centres.
	• NTA must create a separate travel and hospitality desk to carry out this activity for each examination. • Day-by-day and hour-by-hour (sometimes minute-by-minute) timetables for each examination are to be developed by TIA and NTA together. • At every centre, the contingent of 'Observers', 'Institute Representatives', or 'Chief-Proctors' from TIA will ensure extra security. SOPs must be in place detailing their responsibilities at the Test-centers. • Responsibility for ensuring no breach of examination protocols will be distributed between TIA and NTA, thereby reducing day-of-examination stress on a single entity.

	• There will be a direct communication between the examination system and teachers/officers of TIA. • Timely assignment of individual TIA proctors to examination centres, their travel and accommodation arrangements, etc. must be in place in advance. • Conflicts between TIA proctors and NTA personnel to be avoided. • Only the first one or two iterations may have the challenges highlighted; after that, proper protocols that follow timetables will be put in place. • TIAs must ensure that their annual academic calendars explicitly include their examinations, which will be conducted through NTA to allow 'duty leave' for proctoring.

SOP-8	**To prevent "impersonation"**
	• Biometrics need to be strengthened (e.g., Aadhaar-based or 'Digi-Exam' models) to ensure that the registered candidate is the same as the one who appears for the examination and eventually takes admission.

SOP-9	**To prevent "human weaknesses" during the examination**
	• The minute-by-minute SOP for compliance of SOP-7 needs to be thoroughly implemented at every centre without exception. In addition, the time-specifying SOP for each human resource (e.g., proctors from TIA, presiding officer, technical centre-in-charge, invigilators, etc.) needs to be shared with personnel well in advance-proctors from TIA must brief invigilators thoroughly on their respective SOPs before the examination.

SOP-10	**Post-examination**
	• Double-blind processing of candidate data after the examinations is essential. 'Coding' ensures that candidates' responses are thoroughly segregated from their identities. The segregated responses are then 'Tabulated', and blind results are prepared. Only blind results are used for determining cut-offs based on data analytics - thus, the number of 'qualified' candidates is also determined blindly. Only after the above 'Merging' of coding + tabulation is done to declare results promptly.

SOP-11: General Considerations for SOPs

It is essential to ensure adherence to pre-decided deadlines (including specified times and dates in SOPs) and pre-announced result compilation methodology (e.g., normalisation criteria) so that a candidate can derive their 'score directly' if it is not the direct marks obtained by a candidate. Post-examination changes in SOPs and published 'Business Rules' or 'Brochures' should not be entertained.

SOP-11	• Typically, sets of specific SOPs (e.g., '**Suite of Standard Operating Procedures and Check Points**') such as the below are expected to be evolved over time by NTA to cater to specific and general/common aspects of the examination systems: • **NTA Officials** Minimum standard requirement for selection of Testing Centre o Selection of Testing Agency o Communication strategy o Regular Audit (background check) and assessment of all staff o Selection of Observation/ Invigilators o Allotment of the Testing Centres (preventing potential malpractice) o Transportation and safeguarding of exam material o Sanitisation of the Testing Centre (for CBT as well as PPT) o Attire, accessories etc., for Candidates at the time of examination o Collection, re-sealing and back transportation of exam material o Post-exam data analysis and steps to be taken o Data management and archival (minimum to maximum duration) • **Test Indenting Agency (TIA)** o Setting and vetting of Question Paper o SOP for TIA representative to comply at the Testing Centre • **Test Conducting Agency** o SOP for Test conducting Agency representative at Examination Centre o Digital sanitisation and security o Enhance proctored examination o Limited/ restricted use of Mobile network / Internet (Jammer) • **Monitoring Agency** o Use of Biometric/ Aadhaar Verification to prevent any breach/ impersonation in the examination o Real time surveillance

	• **State and District Authorities** ❍ Centre Identification ❍ Security and safety at the centre ❍ Emergency Response (any breach, faulty question etc.) ❍ Communication with NTA ❍ Periodic combat operation against paper leak Mafia

SOP-12: To be followed at the Testing Centre by Officials involved

Standard Operating Procedures followed by IITs for some of their examinations, based on the guidelines provided above, are attached as **Appendix-1** for reference.

SOP-12	a) Guidelines for Institute Representatives (IRs)
	b) Guideline for Platform service provider's venue commanding officers (VCO)
	c) Guideline for Presiding Officer and Deputy Presiding Officer
	d) Guideline for Invigilators
	e) Computer based Test Process Schedule

6.19 Summing up Recommended Counter-Breach Measures

These are deemed to be confidential and sensitive. Details are provided in the Main Report.

CHAPTER 7

REFORMATION (PHASE-2)- LONG-TERM PERSPECTIVES

7.1 Harmonisation and Unification of Tests for UG Admissions

The country's UG and PG-level medical courses are designed to train stakeholders in clinical practice and research. Multiple specializations offered in Medical Education are closely aligned with evolving patient care practices in the country. In contrast, engineering education serves a very different purpose: it has to do with basic engineering science and technology education, where pedagogical approaches, stakeholder training and subsequent professional avenues are relatively much more diverse. Therefore, historically, the UG admissions in Engineering versus Medical Sciences have followed distinctly different methods.

R.61	**It would be greatly desired to keep the admission at the UG level simple and uniform. The examination and admission coordinating Institutes and Institutions admitting candidates should discuss and evolve simpler and uniform eligibility and admission criteria. (e.g., in terms of number of stages for the test, no of attempts, age limit, cut-off for higher secondary marks, multi-session tests, number of times test is conducted in a year, test syllabus, and mode of testing).** **The intended harmonisation may not be easy to achieve in one-step reform. Still, it is possible to align the same at the right time as Education truly becomes multidisciplinary in the country.**

7.2 Migration to Computer Adaptive Testing

7.2.1 The Need for Computer Adaptive Testing

The learning process *per se* is an intrinsically uneven journey among the stakeholders. Every society is discernibly heterogeneous in terms of learning efficiency among its stakeholders. In such a model, it is, therefore, fair to surmise that Testing methods also need to be "adaptive" to the level of the 'learner'. Even though 'adaptive' modes of test-paper designs are not familiar yet, the AI-based training methods are likely to drive new and highly adaptive question paper design strategies very soon.

With impending technology, it is plausible to design question papers that could dynamically "fine-tune" to the level of the learner. Learner-level-centric, adaptive test paper models must be explored in the admission testing so that the examination process evaluates the stakeholders according to "what they know" and rank-orders their performances accordingly.

The admission testing model, which is elimination-centric and currently in vogue, will have to be replaced by ranking-based, adaptive testing methods. It is conceivable that rank holders that emerge from various levels of adaptive test screens (Easy to difficult QP-based testing) could get mapped to varied skill-requiring programmes and job opportunities. If Admission tests closely align with the test-takers skill levels, a new, dynamic and efficient placement model might emerge in the system.

7.2.2 Migration to Computer-Adaptive Testing

R.62	**With the prevailing scenario where the concept of "Normalisation" is yet to be understood and appreciated by the stakeholders (students, parents), it would be necessary to mount concerted efforts to bring home the concept of "adaptive testing" to maturity, starting from the internal examinations at the high school level onwards.**
R.63	**With the recommendations given elsewhere in the report to empower the Kendriya Vidyalayas and Navodaya Vidyalayas, the implementation of CAT could be vigorously accelerated. Thus, a combination of Computer Adaptive Test (CAT) and Computer Based Test (CBT) can be explored for large-scale examinations in India. The combination takes advantage of both systems to achieve the stated goals.**

7.3 NTA-Public Test Platform and Infrastructure

The Committee deliberated extensively on developing models for the forward movement of technology-driven robust fail-safe testing at scale. NTA requires development and regular

upgradation of core digital and physical infrastructure for testing centres and domain expertise to meet the standards of a Global Testing Agency. It was noted that adoption of technology and best practices of Global Examination System, as suitable in the Indian context, is essential.

R.64	**While some of the best practices may be inspired by large-scale global examinations (e.g. GRE, SAT), the takeaways from the CBSE, JEE/IIT system and AIIMS examinations will have large applicability in Indian settings.**
R.65	**CBT has become widely prevalent and preferred compared to the classical paper-based system. The IIT system has played a major role in the large-scale transition from paper-based examinations to CBT.**
R.66	**Given the increasingly larger number of participants in the nationwide tests, a robust CBT model with an examination in multiple shifts has now become the preferred mode of examination and a sure way forward.**
R.67	**It is felt that collaboration with Kendriya and Navodaya Vidyalayas (and/or similar K12 Institutions), along with their committed teachers-community as CBT centres nationwide, might be a welcome option in future. This collaboration will facilitate KVs and similar organisations in developing state-of-the-art digital infrastructure that will allow them to serve as CBT Testing Centres for testing agencies with all security features. It will be a "win-win" situation for both parties, besides facilitating seamless introduction of Computer-Adaptive Testing methods from high school stage to Entrance testing.**
R.68	**Another viable option that emerged was to call up Central Universities, State Universities, other Central/State funded Research institutes, credible Private universities, etc., to establish appropriately designed building infrastructure (about 15000 sq. ft that can accommodate about 500 computer nodes per centre) where NTA can set up computer-nodes, server-rooms and other digital infrastructure enabled Testing Centres.**
R.69	**It is possible to integrate such Testing Centres from KVs, NVs, Universities and Institutes (as mentioned above) to establish a nationwide network of about 400-500 Testing Centres within a time frame of a year or so, which will provide about 2.0-2.5 lakh testing capacity for conducting CBT in one session nationwide. Eventually, one could envisage that every District headquarter in the country should have a standardised and well-equipped CBT Testing Centre.**

R.70	**The transition from Paper and Pencil testing (PPT) to computer-based testing (CBT) needs to be addressed comprehensively, including all associated challenges while reaching out to under-served remote areas. An interesting novel option of establishing "Mobile Test Centers" (proposed in Section 6.12) could address the issue of reaching out to the country's remote and inaccessible locations.**
R.71	**There are indigenous models (developed for smaller size of Testing) which exemplify the comprehensive approach towards adopting CBT mode for high-stakes examinations while ensuring security, fairness, and efficiency throughout the process. The committee recommends that NTA build on such models of test infrastructure and test administration in collaboration with the State Government organisations.**

7.4 Empowering Higher Secondary School System

While coaching centres provide a parallel educational mechanism for students in the country, there is also a serious need to empower our classroom-based school education system from its primary through middle to high school levels across the country. Four specific areas require immediate attention in the public school education system:

R.72	**To significantly improve the physical infrastructure and ensure that all basic facilities are put in place.**
R.73	**Appoint teaching and non-teaching staff so that the required and mandatory student-to-staff ratios are met.**
R.74	**Preparing teaching resources (Books, Digital aids, etc.) that are more contextual, conceptual and analytical so that the students studying in public schools develop *'Ab initio'* learning skills.**
R.75	**Rapid changes in the information landscape demand that teachers undergo periodic training and re-training in various aspects of pedagogy and other teacher training modules. A robust teacher training mechanism and new methods of pedagogy must be put in place across the country urgently so that the country keeps its teachers' pool abreast of high-technology content.**

It is also relevant to mention here that strengthening the School Education System (Base of the Pyramid-BoP) is an essential pre-requisite for the successful implementation of NEP-2020 to increase the Gross Enrolment Ratio (GER) in HEI and skilling among college/ university graduates. Only a strong BoP is likely to generate a committed and skilled workforce at the top and at the scale that the country could benefit from for reaching the "Viksit Bharat" status.

7.5 Research in Educational Testing and Psychometry

'Educational Testing' as a process takes its form and function based on its imposed purpose. In our country, the nationwide testing for admissions, being "high" in stake as well as in volume, is tantamount to the elimination of many test-takers via the process of an examination. We, therefore, seem to conduct an examination to ELIMINATE rather than to SELECT the candidates.

Our examinations being High in stake is a consequence of the structure in which the process is embedded: Society views a few professions as the most desired ones, the stakeholders push for testing the candidates in those few select professions, a high demand ensues in the high rush towards the limited slots available in those limited professions, and a whole "enterprise is erected" to test the candidates for those limited number of seats available.

R.76	**NEP-2020 propels us towards "Viksit Bharat" and tries to undo this "structure" in some tangible manner: Education is now being aligned towards acquiring a holistic learning and understanding of the subjects when the impact of NEP-2020 fully fruitions in the system, the stakeholder's skill sets and knowledge content would likely have significantly diversified and deepened. With such a change, the intensity of high-stakes examinations is expected to drop (Low stakes). In the future, we may have to re-think the education testing models currently in vogue in India.**
R.77	**We may need to explore newer modes and areas of testing, such as:** • **Ability to connect the "dots" and the "context" in the Knowledge space rather than the Knowledge content, per se.** • **Ability to translate "the connected dots of Knowledge" into products and processes or tangible "productive skills".** • **Ability to achieve the above without facing a language barrier (often English as the language barrier).** • **Ability to achieve the above when the learning process of the stakeholder is intrinsically slow (Slow learners) (Adaptive testing).** • **Ability to achieve the same across National boundaries (Internationalization of testing).**
R.78	**Therefore, Test-conducting organisations must install a system of high-end R&D that examines these nuances and invents newer testing styles that suit the ecosystems' changing needs. In the long run, solving MCQ-based testing may NOT serve the intended purpose. We must note that in the world of AI/ML, the learning process will undergo a sea change.**

R.79	**As psychometric analyses evolve, examination testing methods can get markedly fine-tuned. "A single shoe fit-all" model of testing can be replaced by "individualised" testing methods based on test-takers' personality traits and other specific aptitudes and inclinations. Currently, psychometric analysis methods are becoming highly quantitative and supposedly more accurate. A combination of Adaptive CBT guided in parallel by psychometric analysis results of test-takers' inputs may significantly alter the ecosystem of examination testing in the country.**

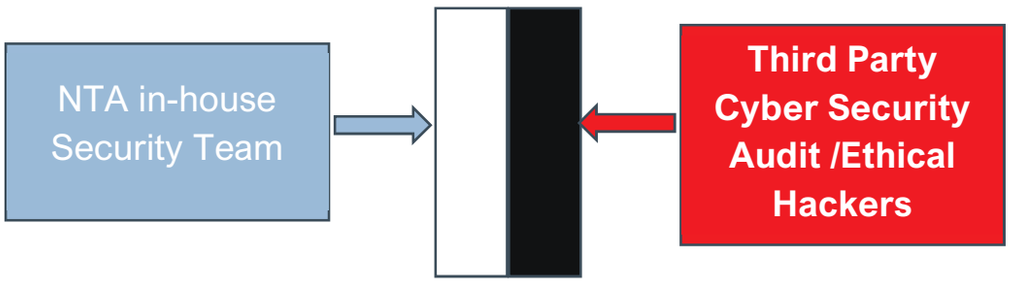
7.6 Coping with Information Security Advancements

As large-scale examinations highly get technology-driven, they invariably become excessively information-loaded. Although end-to-end data encryption offers enormous advantages, it surely cannot be described as "full proof."

It is often said that as technology becomes robust, information breaches and security lapses become less frequent. However, operationally, technology is a "double-edged sword" and drives efforts that render information security vulnerable to cyber-attacks and other breaches. The take-home that emerges from such "seesaw" movements between protection and vulnerability is that the Test Conducting Agency must constantly stay alert and be vigilant to catch the accident pre-emptively and minimise the consequential damages.

The security strength of CBT exams relies heavily on the security guarantees of the question delivery platform and the digital technology deployed in the Testing Centre. As mentioned previously, to have high confidence in the strength of CBT, we need to assume that the personnel involved in the Testing Centres can be compromised. Therefore, apart from having secure cryptographic solutions, research in information security should also focus on surveillance and intrusion detection. Thus, we can classify the research in information security into four broad categories:

R.80	**Adapting Advanced Cryptographic Solution: The world of cryptography is evolving rapidly due to the advancements of technologies like quantum computing, and machine learning. Therefore, cryptographic algorithms that are deployed in the question delivery platform should always be up to date and obsolete and vulnerable cryptographic algorithms must be discarded. Additionally, research in this direction should also focus on verifying the integrity of firmware (for example, the operating system that get installed at the Testing Centre)**

R.81	**Secure Protocol: For secure delivery of the questions, NTA needs to develop a secure protocol that guarantees confidentiality and integrity of the question papers. NTA should have in-house security analysts who will analyse the security protocol and make the necessary changes.**
R.82	**Network Security: In the CBT exam, a significant amount of information is exchanged through the internet. Therefore, a separate research direction should be created that will focus on this and ensure the creation of secure VPN, the authenticity of the data packets being received etc. Checks must be created to thwart cheating attempts through network infiltration.**
R.83	**Surveillance and Digital Monitoring: During the exam process, a huge amount of data gets collected by recording network traffic, CCTV footage, and recording the candidates' monitor. Analysing this information in runtime can help us to detect anomalies in run time and prevent any malicious activity. To streamline this process, research should focus on developing efficient AI-based proctoring and automated anomaly detection. Additionally, a separate data analysis group should be created to analyse the exam audit log for further analysis.**
R.84	**One of the major activities that needs to be performed is a continuous security audit and vulnerability and penetration testing. A possible way to perform this will be to do a red-team-blue team analysis.** 
	Blue Team: The blue team will consist of in-house security analysts of NTA who have complete knowledge and access to the entire CBT exam infrastructure (like white box access). Their major job is to update the security protocols and exam infrastructure as per their research and technological advancement.

	Red Team: The red team will consist of third party of cyber security audit firms or a group of ethical hackers who will have limited access (like black box access) to the exam infrastructure. Their job will be to attack the exam infrastructure with the objective of simulating malicious cheating attempts. If they observe any vulnerability or if they manage to breach the security guarantees, they must immediately inform NTA so that corrective measures can be taken.

Creating such a framework will allow us to catch the vulnerability of our system before the real-world adversary and therefore increase the security guarantee of the CBT exam.

7.7 Adaptation of Technological Advancements

Adapting technological enhancements in an agency conducting high-stakes entrance examinations for millions of candidates involves strategic integration of innovative solutions to enhance efficiency, security, and candidate experience. Leveraging cloud-based infrastructure, artificial intelligence (AI), machine learning (ML), blockchain, mobile apps, virtual reality (VR), augmented reality (AR), natural language processing (NLP), and the Internet of Things (IoT) can revolutionise the examination process. By automating processes, providing secure online assessments, enabling intelligent evaluation, and offering data-driven insights, an agency can optimise its operations and deliver a seamless experience to candidates. However, implementing these enhancements requires careful planning, stakeholder engagement, and continuous evaluation to ensure successful adoption and mitigate potential challenges.

R.85	**The major technological enhancements include the following:** • **Cloud-based infrastructure to provide scalability, reliability, and cost-effectiveness for the exam processes.** • **AI and ML to enable intelligent monitoring, adaptive testing, and analytics-driven insights.** • **Blockchain to ensure secure, transparent, and tamper-proof data management.** • **Mobile apps to enhance candidate engagement, notifications, and support.** • **VR and AR will provide immersive test experiences.** • **Natural Language Processing (NLP) tools for automated scoring of essay-like questions, handling grievances and FAQs, and providing feedback.** • **IoT sensors and cameras to allow real-time monitoring of exam environments.**

R.86	**Using these technologies, the agency can transform its examination process into a seamless, secure, and efficient system that benefits candidates and administrators. The benefits of such a system are many:** • **Automating processes streamlines registration, application, and payment, making them more efficient. Online assessments provide secure, scalable, and accessible platforms for conducting exams.** • **AI-powered evaluation ensures accurate, fast, and unbiased scoring and feedback.** • **Data analytics offer insights into candidate behaviour, performance, and demographic trends.** • **Enhanced security measures, such as biometric authentication, encryption, and intrusion detection, protect the integrity of the exams.**
R.87	**Additionally, cost efficiency and reduced environmental impact are significant benefits. To successfully adapt these technological enhancements, the agency must follow a systematic approach:** • **Begin with a needs assessment and gap analysis to identify areas for improvement.** • **Engage stakeholders and provide training to ensure smooth adoption.** • **Select and integrate the appropriate technology solutions. An in-house solution should be preferred over a third-party solution.** • **Conduct pilot testing and implement a phased rollout.** • **Continuously monitor and evaluate the system, incorporating user feedback and ensuring regulatory compliance.**
R.88	**Challenges in adapting technological enhancements include data privacy and security concerns, infrastructure limitations, the candidate digital divide, technical glitches, user resistance, and change management issues. To address these challenges, the agency must:** • **Address data privacy and security concerns with robust encryption and access controls.** • **Overcome infrastructure limitations by investing in scalable cloud infrastructure.** • **Bridge the candidate's digital divide by offering offline options and digital literacy programs.** • **Prepare for technical glitches with comprehensive contingency plans.** • **Manage change effectively by communicating benefits, providing training, and supporting stakeholders.** • **Conduct stress testing to ensure scalability and address user resistance with clear communication and support.**

R.89	**The following best practices can guide the agency in adapting technological enhancements effectively:** • **Collaborate with experts and stakeholders to ensure the best outcomes.** • **Prioritise candidate experience and accessibility.** • **Maintain transparency and accountability throughout the process.** • **Regularly evaluate and improve the system, keeping it up-to-date with the latest advancements and security protocols.** • **Develop a robust disaster recovery plan and ensure the platform is accessible to candidates with disabilities.**

In conclusion, adapting technological enhancements for high-stakes exams offers many benefits, from increased efficiency and security to improved candidate experience and accessibility. By following a structured implementation roadmap, addressing challenges proactively, and adhering to best practices, a testing agency can successfully transition to a more advanced and reliable examination system. This transformation enhances the integrity and fairness of the exams and paves the way for a more inclusive and sustainable future in education. By embracing technological enhancements, a testing agency can improve the candidate experience of the examination process, ensuring efficiency, security, and fairness for millions of candidates.

7.8 International Cooperation and Collaboration

Keeping the high technology dependence of the operation in future, it is certainly advisable that any large Test Conducting Agency sets up productive collaborations with international educational and assessment organisations such as Educational Testing Service (ETS) etc., which conducts large-scale examinations such as GRE, TOEFL, Work Skill Awareness at the global level.

R.90	**In the current context, NTA must transform itself into a nimble, effective, dynamically evolving entity that constantly adapts to the changing landscape of the country's examination testing ecosystem. It is, therefore, imperative that NTA functions as a zero-error and high-credibility institution of the country that eventually acquires enough capability to handle its operations successfully across the globe.**
R.91	**To develop a state-of-the-art testing model in India, the system needs to analyse domestic and international expertise available in the system. There is also a need to cooperate internationally with examination bodies and educational authorities from other countries to imbibe their best practices, security measures, and innovative solutions.**

R.92	**As test cases, we summarise below some important take-homes from ETS Methodology as best practices:** • ETS conducts a Linear on-the-fly test (LOFT) where a question bank is created before the examination, and a different paper is given for each candidate. This mode does not require internet connectivity. The question bank has every item that goes through Item Response Theory (IRT) and Psychometric testing to ensure each question is reliable and fair. For the question banks, equivalence is assessed, and thus pre-normalisation is ensured. • The tests are conducted on demand extensively using AI for real-time monitoring to facilitate real-time tracking and decision-making during the examination and pre-assessment/post-assessment stages. • To prevent impersonation, ETS uses biometrics, duly capturing facial and voice characteristics. ETS also uses key-stroke analysis to match the candidates' typing characteristics when filling out the application form and writing the examinations. • In case of anomaly detection, the results are put on hold, and the score is cancelled or released based upon subsequent validation.
R.93	**The Committee felt that the ETS model per se cannot be adopted in the Indian examination context, considering the demographic and social variations in the candidates appearing for the examinations. However, NTA can have meaningful MoUs with ETS for using their expertise in the conduct of global-level examinations and global-level partners.**
R.94	**NTA can understand the security protocols they adopt to prevent impersonation and unauthorised hacking, centre security protocols, value management, and safety protocols adopted for transferring, retrieving, and analysing examination content.**

CHAPTER 8

INDIA AS A GLOBAL LEADER IN EDUCATIONAL TESTING

India, being a large and diverse country, offers not only challenges but also impressive opportunities. Any Test conducting agency that learns to operate nationwide testing in India successfully gets to train a robust model that can work at scale in varied conditions and contexts elsewhere in the world. One can surmise that such a model could surely be implementable globally.

R.95	**The National Testing Agency needs to identify the following:** • **Modules (M1) that can be easily scaled up independent of the country-specific context and needs.** • **Modules (M2) that need context-specific and need-based tweaking.** • **An intelligent combined operation involving M1 and M2 might enable the Test conducting Agency from India to operate well globally.** • **Going ahead, we need to create an eco-system in India that empowers the process for the emergence of such globally. competitive test-conducting agencies.**

CHAPTER 9

CONFORMANCE ANALYSIS WITH NEP POLICY, 2020

To begin with, one expects that National Common Admission Testing operates as a SIEVE to assess and admit the stakeholders into the system. In addition, the process of admission being a continuous one also entails that it evolves dynamically. Here, the evolving test admissions must closely align with the basic philosophy of the education system that the country is trying to adapt to. NEP-2020 is now in its full-scale implementation phase across the country. It is imperative that National Admission Testing methods closely align with the spirit and philosophy of NEP-2020. Below, we describe the relevant EXCERPTS from NEP-2020, followed by a description of how the proposed reformation in common entrance testing conforms to the same.

EXCERPT-1 from NEP-2020: Section 2.4 under "Foundational Literacy and Numeracy: An Urgent & Necessary Prerequisite to Learning"

> *"2.4. On the curricular side, there will be an increased focus on foundational literacy and numeracy - and generally, on reading, writing, speaking, counting, arithmetic, and mathematical thinking - throughout the preparatory and middle school curriculum, with a robust system of continuous formative/adaptive assessment to track and thereby individualize and ensure each student's learning. Specific hours daily and regular events over the year involving activities involving these subjects will be dedicated to encouraging and enthusing students. Teacher education and the early-grade curriculum will be redesigned to have a renewed emphasis on foundational literacy and numeracy."*

C-1	**CONFORMANCE-1:** Continuous, low-stake and individualised adaptive testing is the cornerstone of the proposed model, as elaborated in the document, aligning with NEP-2020. Testing Centre selection, mobile Testing Centres, and the policy for setting up training sessions for test-takers in rural and remote areas would render the tests to be inclusive enough for socially disadvantaged groups which aligns with NEP-2020 in trying to become inclusive and accessible to the stakeholders.

EXCERPT-2 from NEP-2020: Section 5.12 under "Continuous Professional Development (CPD)"

> *"5.15. Teachers will be given continuous opportunities for self-improvement and to learn the latest innovations and advances in their professions. These will be offered in multiple modes, including in the form of local, regional, state, national, and international workshops as well as online teacher development modules. Platforms (especially online platforms) will be developed so that teachers may share ideas and best practices. Each teacher will be expected to participate in at least 50 hours of CPD opportunities every year for their own professional development, driven by their own interests. CPD opportunities will, in particular, systematically cover the latest pedagogies regarding foundational literacy and numeracy, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning, arts-integrated, sports-integrated, and storytelling-based approaches, etc."*

C-2	**CONFORMANCE-2:** The Nationwide Standardised Testing Centres network can effectively function as an online shared platform for conducting teachers training programmes during the lean periods of testing when National Common Admission tests are not held. Thus, the teachers' training programme calendar could align with the gap periods in the National Common Admission tests calendar.

EXCERPT-3 from NEP-2020: Section 23.2 under "Technology Use and Integration"

> *"23.2. Given the explosive pace of technological development allied with the sheer creativity of tech-savvy teachers and entrepreneurs, including student entrepreneurs, it is certain that technology will impact education in multiple ways, only some of which can be foreseen at the present time. New technologies involving artificial intelligence, machine learning, blockchains, smart boards, handheld computing devices, adaptive computer testing for student development, and other forms of educational software and hardware*

will not just change what students learn in the classroom but how they learn, and thus these areas and beyond will require extensive research both on the technological as well as educational fronts."

C-3	**CONFORMANCE-3:** The future of National Common Admission tests critically depends on two important best practices (among many others) to be followed, namely, robust R & D-based developmental changes at NTA and imbibing the best practices from international testing agencies through collaborative efforts by NTA, both aspects are heavily underscored in the current document. Technology adoption for National Common Admission tests at all levels closely aligns with the core spirit of NEP-2020.

EXCERPT-4 from NEP-2020: Sections under 4 & 5:

"4.36. The current nature of secondary school exams, including Board exams and entrance exams - and the resulting coaching culture of today - are doing much harm, especially at the secondary school level, replacing valuable time for true learning with excessive exam coaching and preparation. These exams also force students to learn a very narrow band of material in a single stream rather than allowing the flexibility and choice that will be so important in the education system of the future.

4.37. While the Board exams for Grades 10 and 12 will be continued, the existing system of Board and entrance examinations should be reformed to eliminate the need for undertaking coaching classes."

C-4	**CONFORMANCE-4:** The current proposal echoes the concerns expressed in NEP-2020 above in excerpts 4 & 5. An entire section of "Empowering Higher Secondary School System" details some of the remedial measures suggested in the document to address such concerns. The section on "Research in Educational Testing and Psychometry" articulates the measures that could "free up" the students' minds from the damaging effects of "narrow" learning, as envisaged in NEP-2020.

EXCERPT 5 from NEP-2020 sections 6-8:

"4.42. …The National Testing Agency (NTA) will work to offer a high-quality common aptitude test, as well as specialized common subject exams in the sciences, humanities, languages, arts, and vocational subjects, at least twice every year. These exams should test conceptual understanding and the ability to apply knowledge and should aim to eliminate the need for taking coaching for

these exams. Students will be able to choose the subjects for taking the test, and each university will be able to see each student's individual subject portfolio and admit students into their programmes based on individual interests and talents. The NTA will serve as a premier, expert, autonomous testing organization to conduct entrance examinations for undergraduate and graduate admissions and fellowships in higher education institutions. The high quality, range, and flexibility of the NTA testing services will enable most universities to use these common entrance exams – rather than having hundreds of universities each devising their own entrance exams – thereby drastically reducing the burden on students, universities and colleges, and the entire education system. It will be left up to individual universities and colleges to use NTA assessments for their admissions.

15.7. In order to maintain uniform standards for teacher education, the admission to pre-service teacher preparation programmes should be through suitable subject and aptitude tests conducted by the National Testing Agency, and should be standardized keeping in view the linguistic and cultural diversity of the country.

24.4. Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, this Policy recommends the following key initiatives:

(b) Digital infrastructure: There is a need to invest in the creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions to solve for India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.

(h) Online assessment and examinations: Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics. Studies will be undertaken to pilot new ways of assessment using education technologies focusing on 21st-century skills."

C-5	CONFORMANCE-5: The current proposal revives the original philosophy that underlies the genesis of NTA, as described in the above excerpts so elegantly. All aspects described above are brought back for their effective implementation and compliance on the ground. Sections 6.1 and 6.2, some sub-sections of 6.5 & 7 of the document, elaborate the measures suggested in detail.

CHAPTER 10

MONITORING AND PERIODIC APPRAISAL BY M/O EDUCATION, GOI

The current report offers several suggestions and remedial measures for NTA to follow and reform. However, for this to materialise, a monitoring and appraisal system must be implemented. MoE, as its parent Ministry, may follow the model described below.

R.96	**It is suggested that a high-powered STEERING COMMITTEE may be put in place for effective monitoring of the implementation of the recommendations made by High level committee of Experts.** **The terms and conditions of the Steering Committee ought to be well defined:** • The committee closely monitors the performance of NTA in the context of all suggested changes. • Ensures compliance by NTA in mission mode and within time-frame, as specified. • Where required, acts as a mentor to guide through the "bottlenecks" that might arise. • The Steering Committee is empowered to take the required corrective actions that ensure NTA stays on the reformation path as specified. • The Steering Committee submits monthly updates to the MoE about its findings on the NTA reformation path.

In addition, we describe below a mechanism of checks and balances that ensures NTA's efficient functioning following its REFORMATION.

R.97	**With implementation of the recommendation on GB-NTA listed in R.1, MoE would have direct "viewing" of NTAs functioning at the policy enunciation level in GB.**
R.98	**NTA functioning at the day-to-day operational level also needs some level of "soft monitoring and mentoring" by MoE. A nominee of MoE may be nominated to the Executive Council of NTA.**
R.99	**To bring closer scrutiny in the functioning of NTA, it is suggested that GB & EC meet at least once in each quarter and the Minutes of the proceedings be shared with Secretary-HE who in turn will guide the process via MoE nominees in GB & EC. Thus a "closed loop" governance structure will give MoE a FULL VIEW of NTA functioning.**
R.100	**As a mandatory policy, all FINANCIAL, ACADEMIC, EXAMINATIONS, and other AUDIT reports of NTA should be marked to Secretary (HE).**
R.101	**MoE should also constitute a committee to regularly monitor the bodies, such as NTA, on their own terms and conditions, which MoE can decide. It is suggested that DG-NTA be part of such a committee of MoE. The changing expectations of MoE from organisations such as NTA need to be reflected and addressed by such a committee.**

ACKNOWLEDGEMENTS

Functionaries and Focus Groups including Students, Senior Officials of States and Union Territories, Senior Officials of Central/State Investigation Teams (Ref. Para 3.1 of the Report)

1.	Dr. M. Thambudurai, Hon'ble MP, Rajya Sabha
2.	Shri P. S. Kharola, Director, General, National Testing Agency (NTA)
3.	Prof. M. Jagadesh Kumar, Chairman, University Grants Commission (UGC)
4.	Dr. (Mrs.) N. Kalaiselvi, Secretary, Department of Scientific & Industrial Research-cum-Director General, CSIR
5.	Dr. (Mrs.) Geetha Vani Rayasan, Head, HRDG, CSIR
6.	Shri Mahendra Kumar Gupta, Joint Secretary, CSIR
7.	Prof. T. G. Sitharam, Chairman, All India Council for Technical Education
8.	Shri Rahul Singh, Chairman, Central Board of Secondary Education
9.	Shri Binod Kumar Behera, Deputy Commissioner, Kendriya Vidyalaya Sangathan (KVS)
10.	Dr. P. Devakumar, Joint Commissioner, KVS
11.	Shri Manoj Kumar Pandey, Assistant Commissioner, (Academic), KVS
12.	Shri Gyanendra Kumar, Joint Commissioner, Navodaya Vidyalaya Samiti
13.	Shri Deepak Vats, Joint Secretary, UGC
14.	Shri Sanjay Kumar, Sr. Deputy Secretary, CSIR

15.	Prof. Bhaskar Ramamurthi, Ex. Director, IIT Madras
16.	Prof. Mridul Hazarika, Vice Chancellor, Mahapurush Srimanta Sankardev Vishwavidyalaya (MSSV), Assam
17.	Prof. S. Vaidhya Subramaniam, Vice Chancellor, SASTRA University
18.	Shri Nirmal Singh, Co-founder and CEO of Wheebox, Educational Testing Service (ETS)
19.	Shri Sachin Jain, Country Manager India & South Asia at ETS
20.	Shri Wallace Dalrymple, CSO, ETS
21.	Ms. Ankita Sangwan, Student & NEET 2024 candidate
22.	Shri Aman Chopda, Student & NEET 2024 candidate
23.	Shri Anshul Pratap Singh, Student & NEET 2024 candidate
24.	Shri Himanshu Dhamni, Student & NEET 2024 candidate
25.	Shri Mandeep, Student & NEET 2024 candidate
26.	Shri Pranav Kumar, Student & NEET 2024 candidate
27.	Shri Shivam Girotiya, Student & NEET 2024 candidate
28.	Dr. Pranjal Protim Baruah, OSD, Directorate of Higher Education, Govt. of Assam
29.	Dr. Dipak Gaitonde, Asst. Director, Directorate of Technical Education, Govt. of Goa
30.	Shri Srikar M. S., Principal Secretary, Higher Education Department, Govt. of Karnataka
31.	Ms. Ishita Roy, Principal Secretary, Department of Higher Education, Govt. of Kerala
32.	Shri Dileep Sardesai, Commissioner State CET Exam Cell, Maharashtra
33.	Shri Pu Alexander V Chongthu, Add. Resident Commissioner, Mizoram
34.	Dr. Ashwani Bhalla, Deputy Director, Higher Education, Govt. of Punjab
35.	Shri Aravind Agrawal, Secretary, Higher Education Department, Govt. of Odisha

36.	Shri Subir Kumar, Pr. Secretary Higher Education, Higher & Technical Education Department, Govt. of Rajasthan
37.	Prof. A.S. Uniyal, Joint Director, Higher Education Department, Uttarakhand
38.	Prof. Pramod Kumar, Assistant Director, Higher Education Department, Uttarakhand
39.	Dr. Mahendra Rana, Controller of Examination, Kumaun University, Nainital, Uttarakhand
40.	Shri M. P. Agrawal, Principal Secretary, Higher Education, Govt. of Uttar Pradesh
41.	Shri Aditya Kumar Jha, Director, Education, Andaman & Nicobar Administration
42.	Shri Amandeep Singh Bhatti, Additional Secretary, Higher Education, Chandigarh
43.	Prof. Amita Dev, Joint Director, Directorate of Training and Technical Education, Govt. of NCT of Delhi
44.	Dr. Sheikh Ajaz Bashir, Director Colleges, Higher Education Department, Govt. of Jammu & Kashmir
45.	Shri Ghulam Mohd., Additional Deputy Commissioner, UT of Ladakh
46.	Shri A. Y. V. Krishna, Additional Director, Central Bureau of Investigation
47.	Dr. A. Ravi Shankar, Additional Director General of Police, CID, Andhra Pradesh
48.	Shri Manavjit Singh Dhillon, Deputy Inspector General, Bihar
49.	Shri Hasmukh Patel, Director General of Police & Managing Director, Gujarat State Police Housing Corporation Ltd., Gujarat
50.	Shri Himanshu Garg, Superintendent of Police, Rohtak, Haryana
51.	Shri Amitabh Yash, Additional Director General of Police, Special Task Force, Uttar Pradesh
52.	Shri Rajnish Kumar, Chief Operating Officer, NeGD, Digital India Corporation (DIC), Ministry of Electronics & Information Technology, Govt. of India
53.	Dr. Abhijat Sheth, President, National Board of Examinations in Medical Sciences (NBEMS)
54.	Shri Rajesh Kumar, Director, Exam, NTA

55.	Lt. Col. Piyush Kumar Shukla, Director (Exam), NTA
56.	Shri Sudhir, Head Enablement, TCS-iON
57.	Ms. Shweta Prasad, Account Manager, TCS-iON
58.	Shri Akshay Sharma, Delivery Manager, TCS-iON
59.	Shri Viral Shah, Principal Consultant, TCS-iON
60.	Shri Sumeet Singh Baha, GM, NSEIT
61.	Shri Milind Kasbekar, Product Engg. Head, NSEIT
62.	Shri Rajan Khedhark, NSEIT
63.	Shri Jayesh Masand, Head Testing, NSEIT
64.	Shri Sudhanshu Rana, Head IT Security, NSEIT
65.	Shri Manish Chaturvedi, Senior Manager, NSEIT
66.	Shri Prashant Sharma, Deputy Manager, NSEIT
67.	Shri Joe Steeve, Senior Engineer, NSEIT
68.	Ms. Kiran Bhatia, Head Client Relation, Innovatiview India Pvt. Ltd.
69.	Mr. Honey Goel, Head Product Development, Innovatiview India Pvt. Ltd.
70.	Shri Aseem Malhotra, Director Ernst & Young (E&Y)
71.	Shri Vineet Mehta, Partner, E&Y
72.	Shri Yagyavalkya Shukla, National General Secretary, ABVP
73.	Ms. Shivangi Khanwal, National Secretary, ABVP
74.	Shri Shravan B. Raj, National Secretary, ABVP
75	Shri Rahul Raha, National Secretary, ABVP
76	Shri Ankit Shukla, National Secretary, ABVP
77	Ms. Shalini Verma, National Secretary, ABVP
78	Dr. Virendra Singh Solanki, National Secretary, ABVP

Annexure-1

Order No. F. No. 43-3/2019-TS-1/TEL dated 22 June 2024 of Union Ministry of Education

F. No. 43-3/2019-TS-1/TEL
Government of India
Ministry of Education
Department of Higher Education
Shastri Bhawan, New Delhi
Dated 22.06.2024

ORDER

In order to ensure transparent, smooth and fair conduct of examinations through National Testing Agency (NTA), Department of Higher Education, Ministry of Education has decided to constitute a High-Level Committee of Experts to make recommendations on:

- Reform in mechanism of examination process,
- Improvement in Data Security protocols.
- Structure and functioning of National Testing Agency

2. The following shall be the Chairman and Members of the High-Level Committee.

1	**Dr. K. Radhakrishnan**, Former Chairman, ISRO and Chairman BoG, IIT Kanpur.	Chairman
2	**Dr. Randeep Guleria**, Former Director, AIIMS Delhi.	Member
3	**Prof. B J Rao**, Vice Chancellor, Central University of Hyderabad.	Member
4	**Prof. Ramamurthy K**, Professor Emeritus, Department of Civil Engineering, IIT Madras.	Member
5	**Shri Pankaj Bansal**, Co Founder, People Strong and Board Member- Karmayogi Bharat.	Member
6	**Prof. Aditya Mittal**, Dean Student Affairs, IIT Delhi	Member
7	**Shri Govind Jaiswal ,** Joint Secretary, Ministry of Education, Govt. of India	Member Secretary

3. The Terms of Reference of the committee are as follows;

(i) Reform in mechanism of examination process

a. To analyse the end-to-end examination process and suggest measures to improve efficiency of the system and to forestall any possible breach.

Contd...

b. To conduct a thorough review of the Standard Operating Procedures (SOPs)/Protocols of the NTA, and suggest measures to strengthen these procedures/protocols along with monitoring mechanism to ensure compliance at every level.

(ii) Improvement in Data Security protocols

a. To evaluate the existing data security processes and protocols of NTA and recommend measures for its improvement.

b. To examine existing security protocols related to the paper-setting and other processes for different examinations and make recommendations to enhance robustness of system.

(iii) Structure & Functioning of National Testing Agency

a. To make recommendations on the organizational structure and functioning of the National Testing Agency (NTA) for implementation of recommendations given under point 3(i) and 3(ii) and clearly defining the roles and responsibilities of functionaries at every level.

b. Assess the current Grievance Redressal Mechanism of the NTA, identify areas of improvement and make recommendations for enhancing its efficiency.

4. The Committee shall submit its report to the Ministry within two months from the date of issue of this order.

5. The Committee can co-opt any Subject Matter Expert to assist them.

6. The members of the Committee shall be entitled for TA/DA and sitting fee for each meeting as per extant rules.

Varun Bhardwaj 22/6

(Varun Bhardwaj)
Director

To

Chairman and Members of the Committee.

Copy to:

(i) PS to Hon'ble EM/PS to Hon'ble MoS(SM)

(ii) PPS to Secretary, Deptt. of Higher Education

Annexure-2

Hon. Supreme Court Judgement 2024 INSC 568 dated 2 August 2024 (Ref. Section F and G)

2024 INSC 568

Reportable

IN THE SUPREME COURT OF INDIA
CIVIL ORIGINAL JURISDICTION

Writ Petition (Civil) No 335 of 2024

Vanshika Yadav **…Petitioner**

Versus

Union of India & Ors **…Respondents**

With
W.P.(C) No.362/2024
With
W.P.(C) No.369/2024
With
W.P.(C) No.368/2024
With
W.P.(C) No.431/2024
With
W.P.(C) No.379/2024
With
W.P.(C) No.377/2024
With
W.P.(C) No.376/2024
With
W.P.(C) No.375/2024
With
W.P.(C) No.425/2024
With
W.P.(C) No.401/2024
With
W.P.(C) No.415/2024
With
W.P.(C) No.407/2024

With
W.P.(C) No.412/2024
With
W.P.(C) No.383/2024
With
W.P.(C) No.419/2024
With
W.P.(C) No.406/2024
With
W.P.(C) No.403/2024
With
W.P.(C) No.414/2024
With
W.P.(C) No.423/2024
With
W.P.(C) No.427/2024
With
W.P.(C) No.441/2024
With
W.P.(C) No.420/2024
With
W.P.(C) No.430/2024
With
W.P.(C) No.446/2024
With
W.P.(C) No.410/2024
With
T.P.(C) No.1602/2024
With
W.P.(C) No.382/2024
With
W.P.(C) No.394/2024
With
W.P.(C) No.384/2024
With
W.P.(C) No.389/2024
With
W.P.(C) No.417/2024
With
W.P.(C) No.393/2024
With
W.P.(C) No.435/2024
With
W.P.(C) No.449/2024

And With
W.P.(C) No.392/2024

J U D G M E N T

Dr Dhananjaya Y Chandrachud, CJI

Table of Contents

PART A

1. This batch of matters concerns the validity of the National Eligibility cum Entrance Test[1] for undergraduate students. The petitions were disposed of in terms of the directions issued by this Court by its judgment dated 23 July 2024. Detailed reasons were to follow the order. They are recorded in this judgment.

A. Background

2. The National Testing Agency[2] conducts the NEET every year for admission into medical colleges. A total of 1,08,000 seats are available for the MBSS course. Of the seats available for the MBBS course, approximately 56,000 seats are in government hospitals and about 52,000 are in private colleges. Admissions to undergraduate courses in Dentistry, Ayurveda, Unani, and Siddha also utilise the results of the NEET for admission.

3. The NEET is divided into four segments comprising Physics, Chemistry, Botany, and Zoology. Each section contains forty-five questions. The test comprises a total of one hundred and eighty questions. Four marks are awarded for every question which is attempted correctly and one mark is subtracted for each incorrect answer. Questions which are not attempted attract neither positive nor negative marks. Hence, the test carries a maximum of 720 marks in total. The total duration of the test was three hours and twenty minutes.

4. This year, NTA opened the online portal for registration for the NEET on 9 February 2024. NEET was conducted on 5 May 2024 for over 23 lakh candidates at 4750 centres in 571 cities. The exam was also conducted in fourteen cities overseas. Soon after the exam, it became known that the question paper was

[1] "NEET"
[2] "NTA"

PART A

leaked or illegally circulated amongst some students prior to the conduct of the exam at Hazaribagh in Jharkhand and in Patna. First Information Reports[3] were registered in multiple states including Bihar, Maharashtra, Gujarat, Rajasthan and Jharkhand. The Bihar Police appears to have issued a press release[4] stating that its Economic Offences Unit had arrested thirteen persons in Patna in connection with the leak. The Additional Director General of Police, Economic Offences Unit appears to have issued a communication stating that the Economic Offences Unit has not released an official press statement.

5. When the results were declared by NTA on 4 June 2024, it emerged that compensatory or grace marks were awarded to 1563 candidates at certain centres who did not have the opportunity to utilize the entire duration of the exam (i.e., 3 hours 20 minutes). The compensatory marks were awarded upon the recommendation of the Grievance Redressal Committee constituted by NTA. Following the grant of grace marks, these candidates scored in the range of -20 to 720 marks.

6. The investigation into the leak of the paper and the adoption of other unfair means by candidates was transferred from the Bihar State police to the Economic Offences Unit in Bihar. The investigation was later transferred to the Central Bureau of Investigation.[5]

[3] "FIR"
[4] Dated 10 May 2024
[5] "CBI"

PART A

7. Various writ petitions were instituted *inter alia* for cancellation of the exam and conduct of a fresh exam. The petitions variously sought the issuance of the following directions:

   a. Direct NTA to conduct a fresh examination;

   b. Stay the counselling process scheduled to begin from 6 July 2024;

   c. Direct all states to constitute Special Investigation Teams to investigate paper leaks in their jurisdictions and to submit status reports on the same;

   d. Constitute an expert committee to:

      i. Enquire into the examination process and results; and

      ii. Make recommendations on how to improve the process of conducting the examination;

   e. Set aside the portion of the NTA Information Bulletin that discriminates between wrong questions and questions having two wrong answers;

   f. Issue guidelines to prevent papers from leaking in the future;

   g. Direct NTA to correct and republish the results, ranks, and percentiles based on the revised marks;

   h. Declare the award of grace marks to candidates unequally as arbitrary and illegal; and

   i. Stay the declaration of results.

PART B

B. Previous orders of the Court

8. Some candidates who had appeared for the NEET objected to the award of compensatory marks to 1563 candidates on various grounds. By its order dated 13 June 2024, this Court noted that NTA constituted another committee to reconsider the issue. The second committee met on 10, 11 and 12 June 2024 to discuss the grievances raised. It recommended that the grace marks be revoked, and the affected candidates be given the option to take a fresh test.

9. The 1563 affected candidates were given two options – they could either choose to attempt the re-test, in which case they would be ranked based solely on their scores in the re-test, or they could retain their scores from the first test without the compensatory marks. This Court found this course of action to be fair, reasonable and justified. It also recorded the submission of NTA that the re-test would be conducted on 23 June 2024 and the results would be declared before 30 June 2024. The re-test was conducted and the results were declared.

10. By its order dated 8 July 2024, this Court noted the central submissions urged on behalf of the petitioners. It observed that the question of whether the paper leak was confined only to Patna or extended across cities was a matter which must be reserved for more detailed consideration. It also noted that the litmus test for whether a re-test ought to be directed was based on the following aspects:

    a. Whether the alleged breach took place at a systemic level;

    b. Whether the breach was of a nature which affected the integrity of the entire examination process; and

PART B

c. Whether it was possible to segregate the beneficiaries of the fraud from the untainted students.

11. The Court also made certain observations on the competing considerations in a case such as the present one:

> "12. In a situation where the breach in the sanctity of an examination affects the entirety of the process and it is not possible to segregate those who are the beneficiaries of wrongdoing from others, a re-test is likely to be the most appropriate course of action. On the contrary, where the breach is confined to specific areas or centres and it is possible to identify those who are the beneficiaries of wrongdoing, it may not be appropriate to order a re-test particularly in an examination which has been conducted on such a massive scale and which involves over 23 lakh students. The Court cannot also be unmindful of the social consequences involving such a large body of students who have studied for the examination, undertaken costs and expenses and would have to undergo the rigours of a fresh examination if one were to be ordered by the Court. Balancing these considerations requires a careful assessment of the extent and impact of the breach on the integrity of the examination process, ensuring fairness to all stakeholders."

12. Noting that a final decision in the matter would depend on a more detailed set of facts which must be placed on record, it issued five directions requiring the Union of India, NTA, and the Central Bureau of Investigation to each make certain disclosures. First, NTA was required to clarify the following aspects on the basis of all the material which was in its possession as of that date:

PART B

> "14. … (i) When and how NTA first became aware of the paper leak, including any internal notifications or external reports;
>
> (ii) The cities or towns and the centres at which a leak has been noticed or in which candidates have complained of a leak;
>
> (iii) The manner in which the question papers leaked were disseminated to candidates or other persons who would, in turn, distribute them to candidates. In other words, information about the medium through which the leak took place and whether it was electronic (including social media or mobile applications) or physical shall be placed on record;
>
> (iv) The duration of time between the occurrence of the leak or the suspected occurrence of the leak and the actual conduct of the examination which took place between 2 pm and 5:20 pm on 5 May 2024;
>
> (v) The chain of custody of the question paper from the time of its preparation to the time of its dissemination to candidates on the day of the examination; and
>
> (vi) Whether the entirety of the question paper was leaked or whether certain sections or questions were leaked."

13. Second, the Court directed the Investigating Officer of the CBI to file a status report indicating the status of the investigation and the material which had been gathered until date. The Investigating Officer was directed to specify the modalities by which the leaked question paper was made available to students.

PART B

Additionally, both NTA and the CBI were directed make a disclosure in regard to the steps which had been taken to identify the beneficiaries of the leak. They were required to detail the following:

> "16. … (i) The steps which were taken by NTA to identify the centres/cities at which the leak took place;
>
> (ii) The modalities followed for identifying the beneficiaries of the leak; and
>
> (iii) The number of students who have so far been identified to be the beneficiaries of the leaked question papers and the centres at which they appeared for the examination."

14. Third, the Union of India and NTA were directed to inform the Court as to whether it was feasible to use data analytics to identify suspicious cases. If such an approach was found to be feasible, the parameters used for flagging such cases (such as abnormal score patterns) were required to be placed on record.

15. Fourth, NTA was required to make submissions on the decision to be taken on the status of counselling, in view of the potential exercise to be conducted by NTA or the Union Government to identify further beneficiaries of the leak of the question paper.

16. Finally, the government was required to apprise the Court of the steps which were being taken to ensure that the sanctity of the NEET was not compromised in future iterations and issues similar to the ones which arose in 2024 are not repeated in the future. The Court was of the opinion that this was essential because the students who appeared for the examination and whose careers hung in the balance must have confidence in the process. The Court observed

PART B

that the government must consider constituting a multi-disciplinary committee with experts which could recommend measures to obviate breaches of the NEET as well as other exams conducted by NTA. If such a committee had already been constituted, the Court was to be apprised of its composition to enable it to consider whether the composition ought to be strengthened.

17. The Union of India as well as NTA filed affidavits complying with the above directions. The Ministry of Education requested IIT Madras to undertake comprehensive data analytics on the NEET results of 2024. The report submitted by IIT Madras was also tendered to the Court.

18. On 18 July 2024, this Court heard detailed arguments from Mr. Narendra Hooda, senior counsel for the petitioners, on the various issues arising for consideration in this matter. The Solicitor General appearing for the Union of India and Mr. Naresh Kaushik, senior counsel for NTA, also addressed the Court on certain aspects of the case. Other counsel on behalf of the petitioners and intervenors were heard.

19. The Court was of the opinion that it would subserve the principle of transparency if the results were published by NTA and made available to the public at large. Accordingly, it directed NTA to publish the city-wise and centre-wise results of candidates on its website after anonymising them, by 12 noon on 20 July 2024. Further, the Bihar Police was directed to apprise the Court of the material collected by it before the investigation was transferred to CBI. These directions were complied with.

PART B

20. On 22 July 2024, counsel for one of the petitioners advanced submissions *inter alia* on whether the approach adopted by NTA towards one of the questions in the examination was proper. The contours of this issue are delineated in detail in subsequent segments of this judgment. As one of the sub-issues concerned the correct answer to the question, the Court sought an expert opinion from the Indian Institute of Technology,[6] Delhi. The Director of IIT, Delhi was requested to constitute a team of three experts to determine the correct answer to the question and communicate its opinion to the Court by 12 noon on the following day. The opinion of the expert committee was then communicated to the Court, as requested.

21. On 23 July 2024, the arguments in the case were concluded and the conclusions were pronounced in court after the hearings concluded. The Court held that the standard prescribed by decisions of this court for the cancellation of the test had not been met and that a re-test was not warranted. The conclusion of the Court rested on the absence of sufficient material, as on that date, indicative of a widespread or systemic leak or other malpractice. The conclusions of the Court are reproduced below:

> "11. … (i) The fact that a leak of the NEET (UG) 2024 paper took place at Hazaribagh in the State of Jharkhand and at Patna in the State of Bihar is not in dispute;
>
> (ii) Following the transfer of the investigation to it, the CBI has filed its status reports dated 10 July 2024, 17 July 2024 and 21 July 2024. The disclosures by the CBI indicate that the investigation is continuing. The CBI has indicated that at the present stage, the material which has emerged during the course of the investigation would indicate that about 155 students

[6] "IIT"

PART B

drawn from the examination centres at Hazaribagh and Patna appear to be the beneficiaries of the fraud;

(iii) Since the investigation by the CBI has not attained finality at the present WPC 335/2024 7 point of time, this Court had in its previous order required the Union Government to indicate whether trends in regard to the existence of abnormalities can be deduced through data analytics on the basis of the results emanating from 4,750 centres situated in 571 cities. Pursuant to the directions of the Court, the Union Government has produced a report of Indian Institute of Technology,6 Madras. The objection of the petitioners to the report of IIT, Madras on the grounds of alleged bias would be considered in the course of the reasoned judgment which will follow. At this stage, in order to obviate any controversy, the Court has independently scrutinized the data which has been placed on the record by the NTA;

(iv) At the present stage, there is an absence of material on the record to lead to the conclusion that the entire result of the examination stands vitiated or that there was a systemic breach in the sanctity of the examination;

(v) Added to the absence of conclusive material on the record at the present stage, the data which has been produced on the record city-wise and centre-wise and the comparison of data for the years 2022, 2023 and 2024 are not indicative of a systemic leak of the question paper impacting the sanctity of the examination;

(vi) In arriving at the ultimate conclusion, the Court is guided by the well-settled 6 “IIT” WPC 335/2024 8 test of whether it is possible to segregate tainted students from those whose candidature does not suffer from any taint. If the investigation reveals the involvement of an increased number of beneficiaries over and above those who are suspects at the present stage, action shall be pursued against every student found to be involved in wrong doing at any stage, notwithstanding the completion of the counselling process. No student who is revealed to have engaged in acts of fraud or to have been the beneficiary of malpractice would be entitled to claim a vested right or interest in the continuation of the

PART B

> admission in the future by virtue of the findings in this judgment; and
>
> (vii) Directing a fresh NEET (UG) to be conducted for the present year would be replete with serious consequences for over two million students who have appeared in the examination. Adopting such a course of action would, in particular, (i) lead to a disruption of the admission schedule for the commencement of medical courses, setting back the entire process by several months; (ii) lead to cascading effects on the course of medical education; (iii) impact the availability of qualified medical professionals in the future; and (iv) cause a serious element of disadvantage to students belonging to marginalized communities and weaker sections for whom reservation has been made in the allocation of seats."

22. The Court also accepted the report of IIT, Delhi on the correct answer to a particular question which was the subject of controversy. Consequently, NTA was directed to revise the marks of all candidates and update their ranks on the basis of the revised results. The Court also clarified that candidates could agitate any individual grievances, not bearing upon the issues resolved in that judgment, before the High Courts in accordance with law. Lastly, the Court noticed the constitution of the seven-member committee by the Union government to address any issues with the procedures adopted in the conduct of the exam and passed the following direction:

> "23. The Committee will abide by such further directions as may be issued by this Court in its final judgment and order in regard to the areas which should be enquired into by it so as to ensure that (i) the process of conducting the NEET (UG) and other examinations falling within the remit of the NTA is duly strengthened; and (ii) the instances which came to light during the course of the present year are not repeated in the future."

PART C

C. Submissions

23. The petitioners, represented by Mr Narender Hooda, Mr Sanjay R. Hegde, senior counsel and others, have broadly submitted that:

a. There was a widespread leak of the question paper prior to the conduct of the exam, leading to the integrity of the exam being vitiated on a systemic level;
b. The scores and ranks of candidates are highly inflated in 2024 as compared to previous years;
c. NTA's explanation for the score and rank inflation is that they are due to a 25% reduction in the syllabus. This explanation is misleading as the syllabus also included new topics;
d. The significant score inflation in NEET in 2024 has disadvantaged deserving candidates, making it difficult for them to secure admission to government medical colleges and pushing them towards private institutions, which many middle-class families cannot afford. This inflation has disrupted rankings and affected admission opportunities;
e. Concerns have been raised about the handling and transportation of examination materials. Reports indicate a six-day delay in transporting question papers to Hazaribagh, which raises issues of possible tampering. These concerns are compounded by reports that contradict NTA's claims of secure transportation and live CCTV monitoring;
f. The OMR sheets remain at the exam centre for some time after the exam, with persons who may tamper with them if they choose to;

PART C

g. NTA has not adopted a fair marking system for one of the questions. Although only one option is the correct answer, it has treated two options as being correct and has awarded marks for both answers. This is unfair and disadvantages many candidates;

h. The question paper was leaked via 'Telegram' (an instant messaging platform);

i. There are discrepancies in the data provided in 'Table 8' of NTA's press release dated 4 June 2024 compared to the results announced on 20 July 2024;

j. The report of the Director, IIT Madras overlooks critical issues such as: (i) the unusually high number of candidates scoring the perfect score i.e., 720/720; (ii) a sharp increase in students scoring above 700 marks; (iii) significant rank inflation in the 600-720 range; and (iv) the concentration of top scorers in a limited number of cities;

k. The report of the Director, IIT Madras is not reliable because there is a conflict of interest with this case. This is due to the Director being a member of the General Body of NTA;

l. The selective awarding of compensatory marks to 1563 aspirants without transparent criteria as to how they were selected suggests manipulation to benefit certain candidates;

m. Independent analyses suggest that anomalies in the data remain undetected, pointing to systemic issues rather than isolated incidents of cheating. This highlights the need for thorough scrutiny of the examination process;

PART C

n. Systematic failures, including widespread paper leaks, tampering with OMR sheets, and misuse of compensatory marks, suggest a broader security lapse within NTA;

o. NTA's lack of transparency is evident from its initial denial of leaks and inconsistent statements about the extent of paper leaks and compensatory marks;

p. The re-examination process was discriminatory. It did not provide all affected candidates an opportunity to participate. Furthermore, NTA did not include details about compensatory marks in its official press release;

q. NTA appoints private parties to be invigilators. No adequate system of oversight is present to ensure that these private parties do not enable malpractice or are not corrupt; and

r. The scandal has undermined public trust in the examination system and the medical profession, leading to mental health issues among students. Immediate reforms are necessary to restore public confidence and ensure fairness in the examination process.

24. The Solicitor General for the Union of India and Mr Naresh Kaushik, senior counsel for NTA, advanced the following submissions:

a. No mass malpractice has taken place. There were only isolated incidents of malpractice which have been identified and dealt with. Cancelling the exam and conducting a re-exam is not warranted and is contrary to public interest;

b. In Godhra, the attempt to cheat was foiled by prompt action by the authorities. In Patna, the investigation is underway and the results of some candidates have been withheld. However, the preliminary number of

candidates alleged to have cheated is miniscule compared to the total number of candidates;

c. The high number of perfect scores and generally higher marks is because of a reduction in the syllabus by approximately 22-25% compared to last year. Further, the questions were prepared on the basis of universally accessible textbooks to ensure that those from disadvantaged socioeconomic backgrounds do not suffer and to reduce dependency on coaching centres. The top 100 candidates were from 95 different centres in fifty-six different cities in eighteen States or Union Territories;

d. With reference to the question in controversy, the information bulletin released before the exam clearly states that if there are two correct answers, those who marked either one will be awarded marks. Therefore, candidates cannot claim that they did not answer this question because two correct answers were present;

e. The report by the Director of IIT, Madras indicated that there was no evidence of mass malpractice or localized advantages in score distribution. It observed that there was an increase in marks, particularly in the range of 550 to 720, and attributed this to a 25% reduction in syllabus. Candidates achieving high scores were found across multiple cities and centres, suggesting minimal likelihood of malpractice;

f. There was no leak of the question paper via Telegram;

g. The results of candidates suspected of malpractice have been withheld. Show cause notices have been issued to such persons. NTA will respond appropriately to any future cases of malpractice as well;

PART D&E

h. A committee has been constituted to look into improvements to the exam;

i. The reopening of the registration window did not lead to the facilitation of malpractice; and

j. There is no conflict of interest with the Director of IIT, Madras analysing the data in this case because he is only an ex officio member.

D. Issues

25. The following issues arose for consideration in this case:

a. Whether the answer for the question in controversy ought to be revised by NTA;

b. Whether there was a conflict of interest with the Director of IIT, Madras analysing the data in this case; and

c. Whether the sanctity and integrity of the exam were compromised at a systemic level.

E. Analysis

i. <u>Facts which have emerged during the course of the hearing</u>

a. Chain of custody of question papers as detailed by NTA

26. In its affidavits as well as during the course of hearing, NTA provided a comprehensive account of the chain of custody for the question papers, detailing their handling of the question paper, from its preparation to its distribution on the day of the exam. The information provided by NTA is detailed in this segment.

PART E

27. The process begins with the preparation of the question bank. From August to December 2023, experts were invited to the NTA office to create questions in workshop mode. These sessions took place in a restricted area, with the experts sealing their work daily to maintain the security and confidentiality of the content.

28. The next phase involves the preparation, vetting, solving, and typing of the question papers. From 16 February to 28 February 2024, subject experts developed two independent sets of question papers under continuous CCTV surveillance. These papers underwent a rigorous vetting and solving process from 1 March to 7 March 2024, where feedback was collected, and necessary changes were implemented. The final versions of the question papers were then typed confidentially, with the question papers and answer keys lodged separately to prevent any breaches of security.

29. Following the preparation, the manuscripts were dispatched to two separate printing presses on 31 March 2024, adhering to stringent security protocols. Each press was tasked with producing twenty-four sets of question papers with randomized sequencing, overseen by two officers to ensure compliance with security measures.

30. Simultaneously, OMR sheets were printed at a different location and paired with the corresponding question papers which were then sealed in polythene covers to be accessible only to the candidates. These materials, totalling 72 booklets per batch, were then secured in cloth-lined envelopes, strapped, and placed in GPS-enabled trunks with electronic locks, which were monitored via real-time CCTV throughout the process.

PART E

31. The final stage involves the transportation and distribution of the question papers to the examination centres. The question papers for Hazaribagh, Jharkhand, were dispatched on 28 April 2024, via a private logistics company and transported in dedicated closed-body vehicles with electronic locks and GPS tracking.

32. The two different sets of question papers were stored in two separate custodian banks, in all cities: one set was stored in Canara Bank and the other in State Bank of India.[7] Upon arrival at the custodian banks on 3 May 2024, the materials were stored in safety vaults. The papers were then transported from the banks to the examination centres using e-rickshaws.

33. On the day of the examination, city coordinators, appointed and authorized by the Director General of NTA are responsible for collecting the correct set of question papers from the custodian bank. According to the procedure, the city coordinator is required to accompany both the centre superintendent and a neutral observer appointed by NTA. The NTA uses a mobile application to communicate to the city coordinators as to which set of papers should be taken, from either Canara Bank or SBI. The city coordinators collected the materials on 5 May 2024 from SBI, upon being intimated that the question papers from SBI were to be distributed to the students.

34. We were informed that the question paper trunks were stored in CCTV-monitored rooms and opened 45 minutes before the exam (at 1:15 pm), with the process witnessed and certified by two invigilators and two candidates. Each invigilator

[7] "SBI"

received an envelope containing 24 booklets, which were distributed according to the seating plan. Candidates were allowed to open the question paper seals at 1:55 pm, just before the commencement of the exam.

b. Issues in Hazaribagh, Sawai Madhopur, Patna and other places

35. Counsel for the parties disagreed on when the paper was leaked. During the course of the hearing, the petitioners submitted that the leak occurred before 5 May 2024. They argued that the paper was leaked on 3 May, prior to being deposited in the bank, suggesting that the leak took place at an early stage in the process. The Solicitor General of India stated that the paper leaked on the morning of 5 May 2024, purportedly from the Oasis School, Hazaribagh, Jharkhand.

36. The NTA has reported that the leak of the examination paper occurred between 8:02 am and 9:23 am on 5 May 2024. According to their submission, the accused gained unauthorized access by entering the strongroom at Oasis School through a rear door. Once inside, the individual accessed one of the trunks containing the examination materials. This trunk was part of the secure storage intended to safeguard the question papers before distribution. CCTV footage from the school shows him entering at 8:02 am and leaving at 9:23 am. It was also submitted that the accused opened the trunk from the rear so as not to break the seal, took the papers from the trunk, photographed them, resealed the envelope, and delivered the digital copies to the paper solvers by around 9:30 am.

37. Following the transfer of the investigation to it, the CBI has filed its status reports dated 10 July 2024, 17 July 2024 and 21 July 2024. The reports presently

PART E

indicate that the Botany and Zoology segments were solved first, followed by the Physics and Chemistry segments. According to the report, the scanned papers were subsequently sent over WhatsApp to persons in Patna. Furthermore, the reports stated that the solved papers were sent to persons in Hazaribagh. Specifically, two locations in Patna and two in Hazaribagh were identified in the report. The investigation (at this stage) has revealed that the question paper was shared with the candidates only after 10:15 AM, and after 12 noon, they were asked to go to their examination centres.

38. NTA issued a press release on 5 May 2024, acknowledging the issue of incorrect distribution of question papers, which resulted in a significant loss of time for the candidates at Girls Higher Secondary Model School, Mandir, Mantown, Sawai Madhopur, Rajasthan. However, during the course of arguments before us, it emerged that twelve centres initially received question papers from Canara Bank instead of SBI. Of these, four centres replaced the papers originating in Canara Bank with papers lodged in safe custody with SBI upon realizing the mistake. Consequently, in eight centres, candidates attempted the Canara Bank paper in full. As a result, approximately 3,307 candidates were assessed on their performance with respect to the Canara Bank papers instead of the SBI papers. NTA has stated that both sets of papers were prepared by moderators to ensure that the difficulty level was the same.

39. The reports filed by the CBI indicate that the investigation is ongoing. At this stage, the CBI has indicated that the material gathered during the investigation suggests that about 155 students from the examination centres in Hazaribagh and Patna appear to be beneficiaries of the fraud (around 30 in Patna and around

125 in Hazaribagh). No material has been placed before us to demonstrate that the question paper or the solved answers were circulated at random or *en masse* over social media.

40. Separately, it appears that a plan to use unfair means in Godhra was uncovered before it could be executed. The affidavit filed by NTA states that a Deputy Superintendent of Examination had conspired with some students to fill in the answers in the OMR sheet after the conclusion of the test. The affidavit further states that the police became aware of this plan and that they arrested the accused persons before the test began. The candidates suspected to be involved in this conspiracy were identified. NTA submits that their results were withheld and that show cause notices were issued to them.

41. This situation highlights several administrative and procedural flaws within NTA's management of the exam. Firstly, the fact that question papers from Canara Bank were distributed to students in twelve centres instead of papers from SBI reveals a lapse in coordination and oversight. The fact that four centres managed to rectify the mistake while eight continued with the incorrect papers suggests a lack of effective communication between NTA, the centre-coordinators and the banks involved in the distribution process.

42. Secondly, the use of e-rickshaws for transporting question papers to examination centres raises concerns about the security and reliability of paper-handling procedures. E-rickshaws are relatively unsecured and lack proper monitoring, making them unsuitable for the secure transit of sensitive examination materials. This method might be vulnerable to theft, tampering, and mishandling, posing a serious risk to the integrity of the examination process. Although no lapses on

PART E

this count have emerged this year, the possibility of such lapses is enough to warrant a change in the mode of transportation.

43. Thirdly, the use of private courier services for transporting examination materials introduces variability in handling standards and may not ensure the same level of security as official channels. Proper protocols and accountability measures need to be in place to ensure that such services maintain the highest standards of security and reliability.

44. Fourthly, CCTV surveillance is essential for monitoring activities and ensuring that all procedures are followed correctly. Any deficiency makes it challenging to prevent, detect, and address any irregularities or breaches that may occur during the examination process.

ii. <u>The marks awarded for one of the questions must be revised because only one of the options is the correct answer.</u>

45. One of the questions in the NEET (UG) 2024 exam was as follows:

> "Given below are two statements:
>
> Statement I: Atoms are electrically neutral as they contain an equal number of positive and negative charges.
>
> Statement II: Atoms of each element are stable and emit their characteristic spectrum.
>
> In light of the above statements, choose the most appropriate answer from the options given below:
>
> (1) Statement I is incorrect but Statement II is correct.
>
> (2) Both Statement I and Statement II are correct.

PART E

> (3) Both Statement I and Statement II are incorrect.
>
> (4) Statement I is correct but Statement II is incorrect."

46. We have not specified the question number, as both the question and the options may vary across different series of the question paper. Initially, the NTA answer key indicated that the fourth option was correct.

47. Subsequently, based on representations submitted to NTA, a decision was taken to treat both option (2) and option (4) as correct answers. The representations highlighted that the second option was based on an older edition of the NCERT textbook. Many candidates had relied on the outdated textbook and accordingly, sought the award of four marks if they had marked option (2) as the correct answer. They also relied on the NTA Information Bulletin 2024. This bulletin states that if a question is found to be incorrect or dropped after key verification, all candidates will be awarded four marks, regardless of whether they attempted the question.[8] The relevant portion is as follows:

> "(vi) If none of the options is found correct or a Question is found to be wrong or a Question is dropped then all candidates who have appeared will be given four marks (+4) irrespective of the fact whether the question has been attempted or not attempted by the candidate."

In response to the representations from aspirants, NTA amended its answer key and awarded marks to all students who had selected either option (2) or option (4).

[8] NTA Information Bulletin 2024, Chapter 3: Examination Scheme, Clause 3.2 - Pattern of the Test.

PART E

48. Some petitioners argue that this change in marking led to unfair advantages for some students while disadvantaging others, thereby impacting the overall merit list and the rankings. This discrepancy could have altered admission outcomes for many students who narrowly missed the cut-off marks or ranks due to the inclusion of the second option as correct. As held in **Kanpur University** v. **Samir Gupta**,[9] if *prima facie* a question is considered ambiguous, such a question should be deleted. This precedent emphasizes the need for clarity and precision in competitive examinations to maintain fairness and transparency.

49. On 22 July 2024, this Court requested the Director of IIT, Delhi to constitute a three-member committee to determine the correct answer. The Director and Professor from the Department of Energy Science & Engineering, reported on 23 July 2024, that a committee had been formed. This committee consisted of Professors Pradipta Ghosh, Aditya Narain Agnihotri, and Sankalpa Ghosh from the Department of Physics.

50. The expert team constituted has opined that option (4) is the correct answer. This answer reads as follows:

> "(4) Statement I is correct but Statement II is incorrect."

51. The committee formed at IIT, Delhi has unequivocally clarified the correct answer, confirming that option (4) is indeed accurate. This option was initially

[9] 1983 4 SCC 309.

identified by the NTA as the correct answer. Moreover, options (2) and (4) are mutually exclusive, meaning they cannot both be correct simultaneously.

52. The team of experts from IIT Delhi has unequivocally opined that the fourth option (noted above) is the one and only correct answer to the question. NTA did not dispute this during the hearing. We accept the report of IIT, Delhi. The contention based on the NTA Information Bulletin is fallacious. The question itself was not incorrect. Nor was it the case that none of the options were correct. Further, this is not a case where there were two correct answers. Only one of the answers was correct. The issue arose due to the discrepancy in an outdated version of the textbook, not due to an inherent flaw in the question or the absence of correct options. NTA's decision to award marks for both options was not justified. The validity of the question is upheld, and NTA must treat only option (4) as the correct answer.

53. This is crucial to ensure the integrity and fairness of the examination process. The recalibration of ranks is necessary to reflect the true merit of the candidates, correcting any distortions caused by the earlier inclusion of an incorrect answer. This action will restore confidence in the examination system, ensuring that all candidates are evaluated on an equal and just basis. It also addresses the grievances of those who may have been unfairly disadvantaged, thus upholding the principles of equity and transparency in competitive examinations.

PART E

iii. <u>There is no conflict of interest with the Director of IIT, Madras analysing the data in this case</u>

54. In response to the query of this Court as to whether it was possible to use data analytics to identify suspicious cases or suspicious trends in the results of the NEET, the Union of India filed an affidavit answering the question. Pursuant to the order of the Court, the Department of Higher Education, Ministry of Education made a request to the Director, IIT Madras to undertake comprehensive data analytics of the results of all candidates who appeared in the exam this year. A set of parameters was also requested to be devised.

55. IIT, Madras then analysed the data. The affidavit states that this was done with the help of Python for data processing, PostgreSQL for data storage and Metabase for analysis after receiving the relevant data and information from NTA. The executive summary of the report prepared by IIT Madras is as follows:

> "Executive Summary
>
> a. The marks distribution follows the bell-shaped curve that is witnessed in any large-scale examination indicating no abnormality.
>
> b. City wise and center wise analysis was done for two years (2023 and 2024) to find out if there are any abnormal indications. The Analysis is carried out for the Top 1.4 lakh ranks given that the total number of seats across the country is around 1.1 lakhs.
>
> c. This Analysis is granular enough to indicate any abnormality, had a large number of students gotten into high ranks (top 5%), due to malpractice or if students from a particular exam-centre or city were benefitted.
>
> d. The analysis shows that there is neither any indication of mass malpractice nor a localized set of

> candidate being benefitted leading to abnormal scores.
>
> e. There is an overall increase in the marks obtained by students, specifically in the range of 550 to 720. This increase is seen across the cities and centres. This is attributed to 25% reduction in syllabus. In addition, candidates obtaining such high marks are spread across multiple cities and multiple centers, indicating very less likelihood of malpractice."

56. Counsel for the petitioners expressed concerns about the independence and impartiality of the Director of IIT, Madras who signed the report analysing the data. The concern stemmed from the position held by the Director in the General Body of NTA.

57. By a notification dated 6 March 2019, the Ministry of Human Resource Development (which is now the Ministry of Education) constituted the General Body of NTA. The relevant part of the notification is extracted below:

> "(iii) Three Directors of IITs in their ex officio capacity as the present, preceding and succeeding chairpersons of JEE (Advanced) – Member"

58. Since JEE (Advanced) was conducted by IIT Madras this year, the Director of the institution was the ex-officio member of the General Body by virtue of the notification referred to above. The bye-laws of NTA define the role of the General Body *inter alia* as providing overall policy guidance and direction, considering and approving the balance sheet and annual audited accounts presented by the Member Secretary along with the remarks of the Managing Committee, considering and approving the annual report, recommending the annual action plan and budget for the each year, nominating members of the General Body in terms of the relevant rules, delegating any of its powers to the Managing

PART E

Committee or the Member Secretary, creating or abolishing posts in NTA, determining the procedure for appointment of persons to various posts, appointing committees or sub-committees for any purpose, demanding and receiving fees of the exams and tests conducted by NTA, and acquiring properties and investing surplus funds.

59. The functions of the Managing Committee are also set out in the bye-laws. They include taking all operational decisions, managing the resources of NTA, handling its activities, monitoring the financial position to ensure smooth income flow, provide comments or inputs on the annual statements, annual reports, and other reports placed before the General Body. The general superintendence, direction and control of NTA and its income and property is also entrusted to the Managing Committee. Significantly, the bye-laws stipulate that all duties, powers and functions related to carrying on the objectives of NTA shall only be exercised or performed by the Managing Committee. The deliberations of the Managing Committee are required to be reported to the General Body from time to time and the former is required to work in terms of the policy laid down by the latter.

60. From a comparison of the functions of the Managing Committee with those of the General Body, it is evident that the General Body is responsible for supervising the administration of NTA and exercising general oversight of its functioning while the Managing Committee is in charge of its day-to-day administration. Members of the General Body would not, it appears, have a hand in formulating the detailed protocol for the conduct of every examination or in responding to concerns that arise in real-time. Further, the current Director of IIT Madras, Prof. V Kamakoti nominated Prof. A Gopalakrishna to attend the most recently held

meeting of the General Body, on 29 September 2023. The last meeting Prof. Kamakoti attended was on 29 December 2022. A combination of all these factors (including the fact that he is merely an ex officio member of the General Body) lead us to the conclusion that the report of the Director of IIT Madras cannot be faulted on the ground of bias. In any event, in the interests of justice and fairness, the Court has independently considered the data placed on record before reaching a decision on whether the petitions in this case ought to be allowed.

iv. <u>There is no evidence to indicate a systemic leak as on date</u>

a. Position of law

61. The facts of this case and the resultant issue before this Court do not call for the development of new legal principles. It is settled law that the cancellation of an examination, either for the purposes of gaining admission into professional and other courses or for the purpose of recruitment to a government post, is justified only in cases where the sanctity of the exam is found to be compromised at a systemic level. Courts may direct the cancellation of an examination or approve such cancellation by the competent authority only if it is not possible to separate the tainted candidates from the untainted ones.

62. In **Anamica Mishra** v. **U.P. Public Service Commission**,[10] the recruitment process concerning appointment to various educational services posts in Uttar Pradesh was cancelled. The process consisted of two stages – a preliminary written examination and an interview. Only those candidates who scored high marks in the former were invited to participate in the latter. In that case, mistakes

[10] (1990) Supp SCC 692

PART E

in data entry resulted in some candidates who scored high marks being left out of the interview process even as other candidates who scored low marks were interviewed and even selected. Upon realising this error, the State Public Service Commission cancelled the entire recruitment process. The High Court of Allahabad upheld this decision. The appeal against the decision of the High Court was allowed by this Court. This Court found that there was no justification for cancelling the written examination, considering that the errors were confined to the interview process. It found that a more appropriate course of action would have been to set aside the selection of candidates and conduct a fresh set of interviews on the basis of the written exam which had already taken place. Hence, in that case, the Court was of the opinion that it was not a suitable course of action to cancel an examination when no systemic issues persisted. Although not expressly stated by the Court, a proper appreciation of the decision leads to the conclusion that it considered whether a fresh examination was proportionate to the nature of grievance and the extent to which the integrity of the exam was vitiated.

63. From the observations of this Court in **Bihar School Examination Board** v. **Subhas Chandra Sinha**,[11] it can be seen that the number or proportion of students who can be believed to have indulged in malpractice is a relevant factor in deciding cases such as the present one. The relevant observations are extracted below:

> "13. This is not a case of any particular individual who is being charged with adoption of unfair means but of the conduct of all the examinees or at least a vast majority of them at a particular centre. If it is not

[11] (1970) 1 SCC 648

> a question of charging any one individually with unfair means but to condemn the examination as ineffective for the purpose it was held …"

64. In **Madhyamic Shiksha Mandal, M.P.** v. **Abhilash Shiksha Prasar Samiti**,[12] the Board concerned with the exam in that case cancelled the exam upon receiving a report from a Naib Tehsildar who had visited the exam centre. He found that the students were copying even before the question paper was distributed and that they were permitted to enter the exam hall with their books and other material. The report also stated that the invigilators and supervisors did nothing to prevent the students from copying. This Court found that the Board was left with no alternative but to cancel the exam and that it was exceedingly difficult to identify the students who were committing malpractice and those who were not.

65. In **Sachin Kumar** v. **Delhi Subordinate Service Selection Board**,[13] the Court analysed multiple judgments related to the issue before us and made the following pertinent observations on the scope of judicial review in such proceedings:

> "56. The decisions in Railway Recruitment Board [All India Railway Recruitment Board v. K. Shyam Kumar, (2010) 6 SCC 614 : (2010) 2 SCC (L&S) 293] , Gohil [Gohil Vishvaraj Hanubhai v. State of Gujarat, (2017) 13 SCC 621 : (2018) 1 SCC (L&S) 80] and Kalaimani [State of T.N. v. A Kalaimani, (2021) 16 SCC 217 : 2019 SCC OnLine SC 1002] all go to emphasise that a recruiting authority is entitled to take a bona fide view, based on the material before it, that the entire process stands vitiated as a result of which a fresh selection process should be initiated. The integrity of the selection process cannot be lightly disregarded by the High Court

[12] (1998) 9 SCC 236
[13] (2021) 4 SCC 631

> substituting its own subjective opinion on the sufficiency of the material which has been taken into account by the decision making authority. Undoubtedly, fairness to candidates who participate in the process is an important consideration. **There may be situations where candidates who have indulged in irregularities can be identified and it is then possible for the authority to segregate the tainted from the untainted candidates. On the other hand, there may be situations where the nature of the irregularities may be manifold and the number of candidates involved is of such a magnitude that it is impossible to precisely delineate or segregate the tainted from the untainted.** A considered decision of the authority based on the material before it taken bona fide should not lightly be interfered in the exercise of the powers of judicial review unless it stands vitiated on grounds of unreasonableness or proportionality."

66. The purpose of testing whether the integrity of the exam has been compromised at a systemic level is to ensure that the cancellation of the exam which has already taken place and the conduct of a fresh examination is a proportionate response.[14] This is also why courts are required to assess the extent of the use of unfair means and separately, consider whether it is possible to separate tainted and untainted candidates. A holistic view must be taken.

67. In arriving at a conclusion as to whether an examination suffers from widespread issues, courts must ensure that allegations of malpractice are substantiated and that the material on record, including investigative reports, point to that conclusion. There must be at least some evidence to allow the Court to reach that conclusion. This standard need not be unduly strict. To elaborate, it is not necessary for the material on record to point to one and only conclusion which is that malpractice has taken place at a systemic level. However, there must be a

[14] In this regard, see our analysis of Anamica Mishra (supra) at paragraph 62 of this judgment as well as the observations of the Court in Rajesh PU (supra) at paragraph 69 of this judgment.

real possibility of systemic malaise as borne out by the material before the Court. In **Bihar School Examination Board** (supra), this Court recognised that "sufficient material" must be present to justify a decision to cancel examinations:

> "14. … If at a centre the whole body of students receive assistance and are managed to secure success in the neighbourhood of 100% when others at other centres are successful only at an average of 50%, it is obvious that the University or the Board must do something in the matter. It cannot hold a detailed quasi-judicial inquiry with a right to its alumni to plead and lead evidence etc., before the results are withheld or the examinations cancelled. If there is sufficient material on which it can be demonstrated that the university was right in its conclusion that the examinations ought to be cancelled then academic standards require that the university's appreciation of the problem must be respected."

68. In **Madhyamic Shiksha Mandal, M.P.** (supra), too, the Court placed great reliance on the report of the Naib Tehsildar, which indicated that the students in question were copying unchecked and that it was not possible to separate them from the ones who were not copying.

69. In **Union of India** v. **Rajesh P.U.**,[15] the Court was concerned with a case where it was possible to separate the beneficiaries of malpractice from the candidates who conducted themselves in an upright manner. It held that there was no justification to cancel the entire selection and emphasized the importance of the information available to the Court as well as that of concrete and relevant material, in the following terms:

> "In the light of the above and in **the absence of any specific or categorical finding supported by any concrete and relevant material that widespread**

[15] (2003) 7 SCC 285

> **infirmities of an all-pervasive nature**, which could be really said to have undermined the very process itself in its entirety or as a whole and it was impossible to weed out the beneficiaries of one or the other irregularities, or illegalities, if any, there was hardly any justification in law to deny appointment to the other selected candidates whose selections were not found to be, in any manner, vitiated for any one or the other reasons. **Applying a unilaterally rigid and arbitrary standard to cancel the entirety of the selections despite the firm and positive information that except 31 of such selected candidates, no infirmity could be found with reference to others, is nothing but total disregard of relevancies** and allowing to be carried away by irrelevancies, giving a complete go-by to contextual considerations throwing to the winds the principle of proportionality in going farther than what was strictly and reasonably to meet the situation."
>
> (emphasis supplied)

b. The present case

70. That the question paper was leaked and some students indulged in malpractice is beyond cavil. No party before the Court including NTA disputes this. The question, however, is whether this leak was systemic and of a nature as to vitiate the sanctity of the exam. There are various aspects in this case which require the consideration of the Court – the inflation of marks and ranks, the leak of the question paper, other forms of malpractice, the reopening of the registration window, the change of city when the form was opened for corrections, and the award of compensatory marks to 1563 students. These are considered in turn.

71. At the outset, it is necessary to understand certain aspects of the NEET. It is well-known that the counselling process or the process by which admission is gained into different medical colleges depends on the rank of the candidate. The

concept of 'qualifying marks' is, however, sometimes misunderstood. The qualifying mark is arrived at after the declaration of results each year and corresponds to the 50th percentile. This year, the 50th percentile was identified to be at 164 marks of a total of 720 marks, for the unreserved category. Candidates who score 164 marks or above are eligible for admission to the MBBS course. However, not all those who have qualifying marks will necessarily gain admission to a medical college. The qualifying marks are necessary but not sufficient for admission. NTA, in its affidavit, states that the purpose of qualifying marks is to ensure that private colleges do not grant admission to totally undeserving candidates. Only a small percentage of those who obtain the qualifying marks will be allotted one of the 1,08,000 available seats. As mentioned above, 56,000 seats of the total figure are in government medical colleges and the remaining 52,000 are in private colleges. Hence, it is appropriate to assess the percentage of success with respect to the 1,08,000 available seats. Rank 1,08,000 corresponds to 577 marks and rank 56,000 corresponds to 622 marks.

72. Data analysis of results has long been an accepted method of discerning the extent to which an examination has been vitiated. In **Bihar School Examination Board** (supra), this Court considered the validity of the decision to cancel a secondary school examination conducted at a particular centre in Bihar due to the adoption of unfair means by the students. At the centre in which malpractice appeared to have taken place, the percentage of successful examinees was about 80%. In stark contrast, the average percentage of successful candidates at other centres was 50%. The Court also considered the percentage of success subject-wise for thirteen subjects. The marks detailed in the judgment indicate that the candidates performed exceedingly well in all subjects, leading the Court

PART E

to hold that the "*figures speak for themselves*". Despite this conclusion, the Court called for some answer booklets and inspected them. Its conclusion (which was based on the data) that the exam was vitiated was substantiated by the answer booklets, which showed that there was "*remarkable agreement in the answers*". Data analysis is a useful tool in the endeavour to detect malpractice.

73. The data placed before us on the percentage of success from different centres did not account for seats which would be allotted on the basis of reservation for the Scheduled Castes, Scheduled Tribes, Other Backward Castes, and Economically Weaker Sections. Were such seats to be accounted for, the figure of 1,08,000 would almost be halved. Hence, the data analysis errs on the side of caution.

74. Certain centres found themselves in the midst of the controversy in this case. It was averred that malpractice was widespread in Hazaribagh, Jharkhand, Patna, Bihar, and Godhra, Gujarat. The data provided by NTA in relation to Hazaribagh for 2024 is as below:

    a. 2733 candidates in total appeared for the exam;
    b. 126 candidates are within Rank 1,08,000. This indicates a success rate of 4.6%; and
    c. 58 candidates are within Rank 56,000. This indicates a success rate of 2.1%.

    Further, the statistics from previous editions of the NEET indicate that the success rate (relative to the total number of available seats) for Hazaribagh was 7.2% in 2022 and 6.0% in 2023. When these figures are compared with the

success rate for 2024 which is 4.6%, no abnormality becomes evident. To the contrary, the success rate for this year is lower than for the past two years.

75. Similar data for Patna for 2024 is encapsulated below:

a. 48,643 candidates in total appeared for the exam. The exam was conducted in 70 centres across the city;

b. 2691 candidates are within Rank 1,08,000. This indicates a success rate of 5.5%; and

c. 1482 candidates are within Rank 56,000. This indicates a success rate of 3.0%.

In 2022, the success rate (relative to the total number of available seats) was 8.9% and in 2023, the success rate was 7.7%. In Patna, too, the success rate for this year (5.5%) is lower than for the past two years. Even otherwise, there is no irregularity which comes to light.

76. The numbers for Godhra for 2024 are as follows:

a. 2484 candidates in total appeared for the exam. The exam was conducted in 2 centres;

b. 21 candidates are within Rank 1,08,000. This indicates a success rate of 0.8%; and

c. 13 candidates are within Rank 56,000. This indicates a success rate of 0.05%.

PART E

To compare, the success rate (relative to the total number of available seats) in Godhra was 1.5% in 2022 and 2.1% in 2023. Hence, in Godhra, fewer candidates are within the zone in 2024. There are no other deviations in the data which are cause for concern and which meet the standard of indicating a systemic malaise.

77. From the above figures, it becomes clear that there are no abnormalities in the results for 2024 when compared with the results for the past two years. The report of the Director of IIT, Madras also supports the conclusion of this Court. The report stated that there were no "*abnormal indications*" in the results for this year, when compared to previous years. It also stated that "*analysis shows that there is neither any indication of mass malpractice nor a localized set of candidates being benefitted leading to abnormal scores*." Hence, an analysis of the results does not lend support to the case of the petitioners who seek the cancellation of the exam. The leak of the paper does not appear to be widespread or systemic. It appears to be restricted to isolated incidents in some cities, which have been identified by the police or are in the process of being identified by the CBI.

78. We now turn to the issue of the reopening of registration for NEET. The registration window was initially to be open from 9 February 2024 to 9 March 2024. The last date for registration was later extended to 16 March 2024. Thereafter, NTA reopened the registration portal for two days – 9 and 10 April 2024. During the course of the hearing, the Court enquired into the reasons for the reopening as well as the performance of the candidates who registered when the portal was reopened.

PART E

79. NTA stated that it received numerous representations from candidates who raised issues related to One Time Passwords, Aadhar authentication, uploading of documents, and payment. Other technical issues were also raised. Further, it appears that the High Courts of Rajasthan and Karnataka directed NTA to permit certain petitioners, who reported such issues during their registration, to register after the last date. NTA states that it reopened the registration portal to permit all similarly situated candidates to submit their forms for the exam.

80. The data submitted to the Court reflects the performance of the candidates who registered for the exam on 9 and 10 April 2024 and thereafter, appeared for the exam. The students who registered on these dates but did not appear for the exam are excluded from this analysis. Of the 8039 candidates who registered on 9 April 2024, it is seen that five candidates were within the top 1,08,000 ranks and two candidates were in the top 56,000 ranks. This indicates a success rate of 0.06% and 0.02% respectively. Further, of the 14,007 candidates who appeared after having registered on 10 April 2024, forty-four were within the top 1,08,000 ranks and twenty-three were in the top 56,000 ranks. The success rate was 0.31% and 0.14% respectively. This data does not indicate that an abnormal number of candidates who registered on 9 and 10 April 2024 were successful. We do not find that an unusually high number of students who registered on these dates have been successful. Hence, the Court cannot reach the conclusion that the reopening of the registration portal led to or facilitated malpractice. There is no other material on record at the present time which would indicate the same.

81. The next aspect which falls for consideration is that some candidates changed their preferred cities for the exam, which in turn led to the change of their exam

PART E

centre. The petitioners averred that this was done to enable malpractice. After changing their preferred city, 33 aspirants went to Hazaribagh, 637 went to Patna, and 24 went to Godhra. Out of the 33 who appeared from Hazaribagh, only one candidate's scores placed him in a rank higher than or equal to Rank 56,000. Thus, the success rate is 3%. Out of 637 candidates who changed their centre to Patna, only 35 were in the top 1,08,000 ranks, indicating a success rate of 5.5%. 17 candidates scored more than 622 marks (corresponding to Rank 56,000). The success rate is 2.7%. Out of 24 candidates who went to Godhra, no candidate scored more than 577 marks (corresponding to 1,08,000 rank). Here, too, the data is not abnormal and therefore does not indicate that a systemic breach has taken place. An unusual number of candidates who changed their preferred cities do not appear to have a higher rate of success. This is a facility which is intended to subserve the interests of candidates. Therefore, the fact that some aspirants changed their preferred cities, taken alone, cannot be considered evidence of malpractice or of dishonest intention. The choice to appear for the exam from a different city may be motivated by myriad factors and the option to change the preferred city is made available every year. Some other relevant and concrete material must be present before the Court can infer that this led to mass malpractice.

82. The parties in the hearing also addressed submissions on a video on Telegram (an instant messaging application) purportedly showing the leaked paper. It was alleged that the leak took place on 4 May 2024. The NTA, in its affidavit, stated that the video shared on Telegram was fabricated and the time-stamp was altered to indicate that the leak took place before the examination date. The investigation by CBI revealed that the images in the video were indeed doctored.

PART E

The Telegram channel itself was created on 6 May 2024 and the paper was uploaded on 7 May 2024. Hence, there is no merit in this allegation.

83. As for the re-exam conducted for the 1563 candidates who were initially awarded compensatory marks, the order of this Court dated 13 June 2024 found the re-exam to be fair and justified. The issue no longer subsists. NTA was also permitted to act accordingly following the test which was held, by the order of this Court dated 23 July 2024.

84. Hence, sufficient material is not on record at present which indicates a systemic leak or systemic malpractice of other forms. The material on record does not, at present, substantiate the allegation that there has been a widespread malpractice which compromised the integrity of the exam. To the contrary, an assessment of the data indicates that there are no deviations which indicate that systemic cheating has taken place. The information before us at this stage does not show that the question paper was disseminated widely using social media or the internet, or that the answers were being communicated to students using sophisticated electronic means which may prove difficult to trace. The students who were beneficiaries of the leak at Hazaribagh and Patna are capable of being identified. The CBI investigation reveals the number of students who are the beneficiaries of the malpractice at Hazaribagh and Patna at this stage. This leads us to conclude that it is possible to separate the beneficiaries of malpractice or fraud from the honest students. This being the case, the Court cannot direct a re-exam.

85. In the previous section which sets out the position of law on this issue, this Court noticed that the purpose of assessing whether the sanctity of the exam has been

PART E

vitiated at a systemic level was to facilitate and encourage a proportional response. If it is possible to separate the tainted candidates from the untainted ones, there would be no justification to cancel the exam. This is because honest candidates would be made to suffer without reason due to the actions of some unscrupulous candidates. It is also important for the response to malpractice to be proportionate. Ordering a re-test would disrupt the academic schedule for the year. The delay in completing admission will impact the availability of resident doctors to attend to patient care in the future. Any such direction will have disproportionate consequences for candidates from marginalised backgrounds. They would be disadvantaged, in the event of a re-exam – neither are desirable outcomes.

86. The petitioners have placed reliance on the judgments of this Court in **Tanvi Sarwal** v. **CBSE**[16] and **Sachin Kumar** (supra) in support of their contention that a re-test must be directed. It is necessary to briefly advert to the facts and the ruling in these cases to appreciate their applicability to the present case.

87. In **Tanvi Sarwal's case** (supra), the Court adjudicated writ petitions challenging the validity of the All India Pre-Medical and Pre-Dental Entrance Test 2015 on the ground that the integrity of the exam had been compromised by the use of unfair means. After the exam was conducted, news reports revealed that answer keys had been transmitted to many candidates in the course of the examination, using electronic devices. The Court noticed the following from multiple status reports filed by the investigating agency in that case:

[16] (2015) 6 SCC 573

PART E

a. Some arrested persons stated that they had planned to recover Rs. 20 lakhs from each student who wished to avail of their services to cheat in the exam;

b. One of the arrested persons was a doctor. Several answer keys were found to be stored on his mobile phone. They were also forwarded to two other mobile numbers using WhatsApp;

c. Vests for men and women fitted with micro SIMs were recovered from some persons suspected to be involved in the scam;

d. Bluetooth devices were recovered from a person suspected of facilitating cheating;

e. The question paper had been leaked in Behror, Alwar District, Rajasthan. The arrested persons planned to communicate the answers to the students during the conduct of the examination using the vests fitted with micro SIMs. At least three hundred such vests were used;

f. The persons suspected of being the masterminds of the scam were found to have called several people in Jharkhand, Bihar, Uttar Pradesh, Rajasthan, Delhi, Maharashtra, Odisha and Haryana, using different phone numbers;

g. 358 mobile numbers were used to transmit the answers to the question paper to various beneficiaries across the country;

h. Some candidates admitted to having received the answers during the exam, through electronic devices supplied to them by the alleged offenders;

i. Until that point, forty-four beneficiaries of the leak had been identified;

PART E

j. The investigating agency stated that it was beyond doubt that the plan to provide answers during the exam was prepared and executed by an organised gang with a network spreading across the country; and

k. The Inspector General of Police, Haryana admitted that it may not be possible to identify every single beneficiary of the leak.

88. On the basis of the information before it, the Court noted that it could choose one of two alternatives – direct that the results of the forty-four beneficiaries of malpractice be withheld and permit the counselling process to proceed or direct the conduct of a fresh exam. The Court was of the opinion that the *modus operandi* of the leak made it likely that numerous candidates, apart from the forty-four who had been identified at the time, were likely to have been beneficiaries of that system of malpractice. It held that it was not possible to identify all the beneficiaries of the leak. Further, it ruled that the segregation of the forty-four identified beneficiaries of the leak was not a viable solution because there was a possibility that unidentified beneficiaries would stand to gain at the cost of honest candidates. The Court, finding that the sanctity of the exam had been compromised, cancelled the exam and directed the conduct of a fresh exam.

89. **Tanvi Sarwal's case** (supra) is distinguishable from the case before us on many counts. First and foremost, the unscrupulous candidates in that case used sophisticated technology including vests fitted with micro SIMs to cheat. No such technology has come to light at present, in this case. Second, the question paper was found to have been shared on WhatsApp before the date of the exam. Once shared through social media, it is exceedingly difficult to trace the journey of a post or message or document. Here, the record at present does not indicate that

the question paper was shared on social media before the date of the exam. Third, In **Tanvi Sarwal's case** (supra), the assistance of a gang with a nationwide network was stated to have been taken and calls were made by the accused to persons living in numerous states in the country. No such nationwide ring is seen at present in this case. Fourth, the Court found that it was not possible to separate the beneficiaries of the leak from the honest candidates. Here, the Court has concluded that the fraudulent candidates may be identified by the investigating agency. For these reasons, the decision in **Tanvi Sarwal** (supra) does not support the case of the petitioners. The allegations in this case are not substantiated by the material on record.

90. In **Sachin Kumar's case** (supra), the two-Judge Bench of this Court (of which one of us, D Y Chandrachud, J., was a part) was concerned with the recruitment process for the post of Head Clerk. The Government of the National Capital Territory of Delhi cancelled the process on the basis of certain irregularities in the conduct of the examination. The Central Administrative Tribunal annulled this decision of the Government. In proceedings under Article 226 of the Constitution before a Division Bench of the Delhi High Court, the decision of the Central Administrative Tribunal was partly affirmed. The appeals arising from the decision of the High Court resulted in the case before this Court.

91. In that case, a committee was appointed to conduct an enquiry into the complaints regarding malpractice during the exam. In its report, the committee *inter alia* found that a large number of candidates in the zone of selection hailed from a small geographical area within Delhi, a significant proportion of candidates belonged to the same community (as indicated by their surnames), and the

PART E

failure to randomise the seating plan resulted in candidates from the same family being seated in consecutive seats. In addition, the committee noted that certain persons had masterminded a racket which led to the impersonation of candidates, the leakage of question papers, and the dilution of the processes in place to ensure the fair conduct of the exam, including blurring of videography, faulty jammers, etc.

92. The Government of the National Capital Territory of Delhi then constituted a second committee to scrutinise candidates who were in the zone of consideration with a view to identifying cases of impersonation. This committee found that there were no irregularities with the candidature of those persons who had come forth for assessment. The Deputy Chief Minister of Delhi then cancelled the examination, leading to the eventual challenge of his decision.

93. The question in **Sachin Kumar** (supra) was whether the decision to cancel the recruitment process was justified. The Court held that the credibility of the entire exam stood vitiated by systemic irregularities, as highlighted by the findings of the first committee appointed by the government. It found that the allegations made regarding the sanctity of the exam had been substantiated by the investigation which followed. It therefore upheld the decision of the Deputy Chief Minister to cancel the exam and set aside the judgment of the High Court.

94. That case, too, is distinct from the one before us. In **Sachin Kumar** (supra), the material before the Court was sufficient to lead to the conclusion that there was mass malpractice, which attacked the integrity of the exam at a systemic level. This is indicated by the fact that a large number of candidates in the zone of selection were from the same concentrated geographical region and that

candidates from the same family were sitting in consecutive spots during the exam. There was also impersonation and the coordinated dilution of security protocols in that case. There was an abundance of material before the Court in that case. The same cannot be said to be true in the instant case. Hence, the ruling in that case cannot influence the outcome in this case. Moreover, in cases such as these, courts must take a holistic view of the facts before them and reach an independent conclusion. Different courses of action are appropriate in different circumstances.

F. The conduct of NTA: Cause for concern

95. While the various issues discussed until now do not lead to the conclusion that the integrity of the NEET was vitiated at a systemic level, the manner in which NTA has organised the exam this year gives rise to serious concerns. The Court is cognizant of the fact that national-level exams with participation from tens of lakhs of students require immense resources, coordination, and planning. But that is precisely the reason for the existence of a body such as NTA. It is no excuse to say that the exam is conducted in myriad centres or that a large number of aspirants appear for the exam. NTA has sufficient resources at its disposal. It has adequate funding, time, and opportunities to organise exams such as the NEET without lapses of the kind that occurred this year.

96. Multiple occurrences in the conduct of the exam prompt the Court to make these observations. The paper was leaked in Patna and Hazaribagh. In one of the centres, the rear door of the strongroom was opened and unauthorised persons were permitted to access the question papers. This indicates that there is a serious lapse in security and that security measures which are stringent and

PART F

effective must be implemented by NTA. Further, it came to light that the question papers were sometimes transported in e-rickshaws and that the services of private courier companies were availed of. Mr. Hooda, learned senior counsel for the petitioners, also rightly pointed out that NTA did not specify a time by which the OMR sheets were required to be sealed after the conclusion of the exam. In the absence of a stipulation in this regard, dishonest persons may tamper with the OMR sheets even after the candidates have submitted them and exited the exam hall. Another point of concern is that NTA relies on persons over whom it does not exercise direct oversight to be the invigilators for the exam. There are various methods which may be adopted to ensure appropriate oversight over invigilators and decrease the likelihood of the use of unfair means. All of these issues indicate that the security protocols must be tightened to decrease the possibility of malpractice and fraud and to lessen access by private persons to the question papers.

97. In at least twelve centres, the question paper stored in Canara Bank was wrongly distributed to candidates. The question paper which should have been distributed was the one stored in SBI. In many centres, aspirants completed the incorrect question paper and were ultimately evaluated while in others, the relevant authorities realised the mistake and then distributed the correct question paper. This either indicates that the city coordinators were irresponsible and not fit for duty or that the information as to which question paper was to be distributed to candidates was not properly communicated to them. Certainly, neither Canara Bank nor SBI appear to have been notified as to whether the papers in their custody were to be released. As long as the city coordinators furnished proof of authorisation, the papers were released without question. The custodian banks

have to be informed as to whether they should release the question papers in their possession. Had the custodian banks been informed whether or not to release the papers in their possession, the city coordinators would have been unable to collect the incorrect set of question papers, even if they made an honest mistake. NTA must consider the various possibilities and plan the protocol to be followed after careful consideration.

98. The use of mobile applications to communicate with the relevant parties would permit real-time communication and allow NTA to inform the banks even a few minutes before the time at which the city coordinator was authorised to collect the papers. This would ensure that no unscrupulous persons from the custodian banks can take advantage of the information made available to them. NTA already uses a mobile application to communicate with the city coordinators and others so it would not be difficult to communicate with the custodian banks. Other modes of communication may be explored and adopted, as long as the custodian banks are informed whether to release the papers they have stored for safekeeping.

99. The highest scoring candidates in a competitive exam usually have the option of gaining admission into the best institutions. It is consequential in more ways than one to be a candidate who obtains a perfect score. When the results were released, it appeared that sixty-seven aspirants had scored a perfect score of 720 / 720. After the removal of the compensatory marks and the conduct of the re-test for 1563 candidates, the number of persons who had a perfect score dropped to sixty-one. Subsequently, in the course of the hearing, we were informed that forty-four of the sixty-one top scorers had marked the incorrect

option to the question in controversy. By its judgment dated 23 July 2024, this Court directed NTA to treat only one of the options as the correct answer and recompute the marks and ranks on the basis of this revision to the answer key. The necessary consequence of these directions is that the scores of the same forty-four aspirants will no longer be 720 / 720. The number of scorers with 720/720 marks then drops to seventeen. It is a matter of serious concern that this number fell from sixty-seven to seventeen during the course of the hearing. The intervention of the Court, reports by the media, and representations by candidates ensured that these changes were made in the interests of fairness and justice. However, the system adopted by NTA should be such that just outcomes are reached even when these external catalysts are not present. The system must be such as to inspire public confidence.

100. Another aspect which is most unfortunate is the lack of responsible decision-making with respect to the 1563 candidates who were initially awarded compensatory marks. As noticed above, a committee constituted by NTA first recommended that the compensatory marks be awarded. However, as the controversy surrounding the award of these marks became more prominent, a second committee was constituted. This committee recommended the cancellation of compensatory marks and the conduct of a re-exam in their place for those students. A body such as NTA which is entrusted with immense responsibility in relation to highly important competitive exams cannot afford to misstep, take an incorrect decision, and amend it at a later stage. All decisions must be well-considered, with due regard to the importance of the decision. Flip-flops are an anathema to fairness.

PART G

101. Intense competition amongst the aspirants coupled with the commercialisation of education has led to a few towns or cities becoming hubs for classes which train candidates for competitive exams. While these towns or cities may have a higher rate of success than some others, instances of malpractice at such centres should be treated on par with any other instance. All instances of the use of unfair means must be dealt with firmly.

102. NTA is directed to ensure that all the concerns highlighted by the Court in this judgment are addressed. The committee constituted by the Union Government is also requested to keep these issues in mind while formulating its recommendations.

G. Issues in the conduct of the examination and the remit of the committee constituted by the Union Government

103. During the hearing, the petitioners urged that there were systemic flaws in the conduct of the examination and that a more thorough procedure needs to be put in place to ensure that malpractice is avoided. Given the crucial role of the examination in shaping the careers of future medical professionals responsible for public health, any compromise in the merit-based selection process jeopardizes the quality of healthcare as well as the careers of aspirants. The fairness and reliability of the examination system cannot be such that public confidence is lost.

104. The formation of a committee is essential to thoroughly investigate and address the structural issues. A dedicated committee with suitably qualified experts can ensure a comprehensive review of the security measures, candidate verification

PART G

processes, and the overall management of the examination. By identifying and rectifying vulnerabilities, such a committee will help restore trust in the examination system and implement robust safeguards to prevent future malpractice.

105. The Court has been apprised of the fact that the Union Government has constituted a seven-member expert committee, chaired by Dr K Radhakrishnan, former Chairman, ISRO, consisting of the following members:

> "(i) Dr Randeep Guleria, Member
>
> (ii) Prof B J Rao, Member
>
> (iii) Prof Ramamurthy K, Member
>
> (iv) Shri Pankaj Bansal, Member
>
> (v) Prof Aditya Mittal, Member
>
> (vi) Shri Govind Jaiswal, Member Secretary"

106. The remit of the Committee, in addition to the tasks that it has been entrusted with by the Union government and the NTA, shall encompass the following:

a. Examination Security and Administration

i. Evaluate and recommend reforms in the mechanism of administration of the exam. This includes ensuring rigorous checks and balances at every stage, from setting the question papers to declaring the final results;

ii. Formulate standard operating procedures[17] which set out the timelines for registration, changes to preferred cities, the sealing of OMR sheets once

[17] "SOP"

candidates submit them to the invigilator, and other processes related to the conduct of the exam. Once adopted by NTA, the SOP must be adhered to, to maintain the integrity of the exam;

iii. Review the process by which exam centres are currently allotted to candidates and recommend any changes which may be required in the interests of fairness and transparency. The preferences of candidates may continue to be accounted for;

iv. Recommend stricter procedures for verifying candidate identities, if required, with a view to preventing impersonation and ensuring that only registered and authorized candidates are allowed to take the exams. Such processes may include, but are not limited to, enhanced identity checks at various stages of the exam (such as registration, entry to the exam centre, and before the commencement of the exam) and technological innovations to prevent impersonation. All procedures should comply with laws on privacy;

v. Consider the viability of comprehensive CCTV surveillance systems at all examination centers, including real-time monitoring and recording of all activities. The aim is to deter and detect any malpractice or unauthorized activities and to provide evidence in case of incidents;

vi. Review and suggest enhancements for the processes for the setting, printing, transportation, storage, and handling of question papers. This may include tamper-evident packaging and using secure logistics providers to prevent unauthorized access and leaks during critical phases. The viability

PART G

of utilizing closed vehicles with locks and real-time tracking systems rather than e-rickshaws may be considered;

vii. Consider the viability of conducting regular audits and surprise inspections of examination centres. This is to ensure compliance with established security protocols, identify and address potential vulnerabilities or lapses in the system, and ensure that all centres adhere to the highest standards of examination security; and

viii. Recommend the development of a robust grievance redressal mechanism. This should allow candidates to report any irregularities or issues promptly;

b. Data Security and Technological Enhancements

i. Research and suggest advanced data security protocols, including encryption and secure data transmission methods. These measures should protect examination materials from unauthorized access and potential leaks, ensuring that all sensitive information remains secure;

ii. Recommend systems to monitor and track digital footprints related to the examination materials. This might include digital watermarking and tracking technologies to trace the origin of leaked documents and identify potential breaches in the electronic dissemination process;

iii. Consider how regularly cybersecurity audits and vulnerability assessments must be conducted to identify and address potential weaknesses in the electronic dissemination and storage systems. These audits should evaluate the effectiveness of current security measures and recommend improvements based on the latest cybersecurity trends; and

PART G

iv. Explore technological innovations to enhance examination security and efficiency. This could include advancements in digital authentication, secure online platforms, and other emerging technologies that can safeguard against potential threats;

c. Policy and Stakeholder Engagement

i. Review and recommend updates to the policies and SOPs of NTA to align with best practices, ensuring that the agency is equipped to handle evolving challenges in examination security;

ii. Establish a transparent communication strategy to keep all stakeholders, including candidates, educational institutions, and the public, informed about the measures being taken to ensure the integrity and fairness of the examination process as well as of the response of NTA to any malpractice which is identified;

iii. Recommend the implementation of a comprehensive communication strategy to keep all stakeholders involved in the process — including banks, examination centres, and logistical partners — well-informed. This strategy should detail the protocols for secure transportation, storage, and handling of examination materials, and ensure regular updates on any issues or changes; and

iv. Recommend measures to address and mitigate any socioeconomic disparities that may affect candidates' ability to participate in or benefit from the examination process. This might include providing support and

PART G

resources to underprivileged candidates to ensure equal opportunities and reduce barriers to entry;

d. Collaboration and International Cooperation

i. Consider the viability of NTA engaging in international cooperation with examination bodies and educational authorities from other countries to share best practices, security measures, and innovative solutions; and

ii. Suggest the creation of a management framework to identify, assess, and mitigate potential risks related to examination security. This framework should include protocols for assessing risks, contingency plans, and strategies for dealing with unforeseen challenges that may arise during the examination process;

e. Support and Training

i. Recommend plans or strategies for the development and implementation of mental health support programs for students, including counselling services and stress management workshops. These programs should address the psychological impact of exams and also ensure the well-being of all candidates throughout the examination process. Qualified experts from relevant fields must be consulted for this purpose; and

ii. Consider the viability of NTA conducting comprehensive training programs for all staff involved in the examination process (including but not limited to question paper setters, invigilators, and administrative personnel). These programs should cover security protocols, ethical standards, and the latest

technology to ensure everyone involved is well-equipped to maintain the integrity of the examination.

107. While carrying out its mandate, the committee must bear in mind the facts and issues highlighted in Section F of this judgment.

108. The Ministry of Education constituted the committee by a notification dated 22 June 2024. The notification stated that the report of the committee shall be submitted within two months from the date of the issue of the notification. This would be 22 August 2024. However, in view of the expanded remit of the committee in terms of this judgment, additional time may be required for a holistic report on various aspects related to the conduct of the NEET. Therefore, the report of the committee shall be submitted to the Ministry of Education by 30 September 2024. The Ministry of Education shall take a decision on the recommendations made by the committee within a period of one month from receiving the report. It shall prepare and begin to implement a plan of action on this basis. The Ministry of Education shall report compliance with these directions within two weeks of taking the decision on the implementation of the recommendations.

H. Parting remarks

109. The principal issue which the Court was concerned with in this case is whether the sanctity of the NEET was compromised this year and whether the process should be scrapped and a fresh test should be convened. Having answered the question in the above terms, it needs to be clarified that if any student, including in the present batch, has an individual grievance not bearing on the issues which

PART H

have been resolved by this judgment, it would be open to them to pursue their rights and remedies in accordance with law, including by moving the jurisdictional High Courts under Article 226 of the Constitution. However, before moving the High Court for the grant of relief, the petitioners would have to seek the withdrawal of their petitions before this Court, if any have been filed.

110. The transfer petitions at the instance of the NTA or any other party raising the issue as regards the validity of NEET in 2024 are allowed. The resulting transferred cases shall stand disposed of in terms of the above directions subject to the clarification that individual grievances, if any, that remain, may be addressed before the jurisdictional High Court. The interlocutory applications raising individual grievances are similarly permitted to be withdrawn with liberty reserved in the above terms.

111. Nothing in this judgment shall be construed as a finding of fact in relation to criminal proceedings arising from the leak of the question paper or from other forms of malpractice. However, the ruling of the Court will not be relied on to refrain from prosecuting individuals found to have indulged in malpractice in any centres, irrespective of whether such fraud has already been identified or is identified in the future. Stringent action in accordance with law shall be taken against every candidate who is detected or who may hereafter be detected to have been the beneficiary of any malpractice.

112. List before an appropriate Bench to verify compliance with the directions issued in this judgment.

PART H

113. The Petitions shall stand disposed of in the above terms.

..….…..….....…........……………….…........CJI.
[Dr Dhananjaya Y Chandrachud]

……....…..…....….........…………………..….......J.
[J B Pardiwala]

……....…..…....….........…………………..….......J.
[Manoj Misra]

New Delhi;
August 02, 2024

Appendix-1

Samples of a few Standard Operating Procedures

(Courtesy: IIT System)

SAMPLES OF A FEW OF STANDARD OPERATING PROCEDURES (COURTESY: IIT SYSTEM)

A. Guidelines For Institute Representatives (IRs)

A smooth and successful conduct of the exam is possible only with dedication and contribution of IRs. The primary tasks of the IRs are to (a) ensure safe custody of exam materials; (b) ensure proper arrangement at the centre and (c) facilitate conduct of the exam.

1. EXAMINATION MATERIAL

All the IRs of a centre **must personally be present** to collect the following exam material from the Chairperson, Examination 2024.

a) A pouch containing a blank USB drive to collect Responses, Audit Logs, and Biometric data of the candidates from the Primary server, photographs of candidates with doubtful identity and provisional status, photographs of scribe (if applicable), and e-copies of the Photo ID of the Centre Personnel.

b) Verification Record

c) Roll List

d) Stationery items

e) Centre File

The inventory of the material is given in Form A1. IRs must ensure that they have all the material mentioned in the form for all the sessions and also make sure that they bring all the material back after the exam.

2. OPERATIONS ON MOCK DAY

Mock exam has been scheduled on _____ between 2:30 PM to 5:30 PM. IRs are requested to contact the VCO and PO to confirm their mock schedule at least one day in

advance. Note that the mock exam for the test papers scheduled in the afternoon session cannot be started before 2:30 PM and hence IRs are suggested to plan accordingly.

The PO and VCO are required to arrange a meeting of all the personnel engaged in the exam duty at the Centre, including Invigilators, with the IRs, on the day before the exam. IRs should impress upon the PO/DPO that everyone MUST attend this meeting.

The following activities are to be conducted on the day before the exam by the IRs:

a) Confirm with the PO that they have contacted local Police Station, and Electricity Authorities, and other Competent Authorities for security, power and Internet arrangements on the day of Exam.

b) During the meeting with personnel involved in conducting the exam, the responsibilities of the Invigilators must be clearly explained, emphasizing the need to follow the instructions meticulously and adhere strictly to the time schedule. It is extremely important that ALL Invigilators attend this meeting and understand their responsibilities.

c) IRs MUST ensure that the Form A2 (a & b) is filled by all the personnel. IRs should also collect e-copies of valid government Photo IDs of all the personnel.

d) IRs must check the availability and readiness of the infrastructure at the Centre (including UPS, generators).

e) Monitor the mock test, using sample test papers for the **session with maximum count** in that centre and should run on all nodes for **a minimum of 1 hour**. Invigilators must be present during the mock test and must understand the exam from a candidate's perspective.

During the mock test, IRs must ensure that:

- Every candidate registered to the Centre (as per Roll List) has a computer assigned and that the computer is working satisfactorily.
- The Registration Number of the candidate would be displayed on the screen of the system assigned to that candidate. Exam Platform service provider should demonstrate this by logging on candidate's console during the mock test.
- System operator should be able to download the mock question paper bundle successfully from their data centre.
- Virtual calculator is provided on the computer screen for each paper.
- "Useful Data" link should be available for MA and MS Test Papers.

- The paper code assigned to a candidate is correct as per the Roll List and Verification Records.
- Buffer systems should also be checked to ensure that they are working.
- Once the mock test is complete, Exam Platform service provider's team should be able to successfully upload the Responses, Audit Trails and Biometric Data to their Data Centre.

f) Ensure that partitions are provided and properly placed between adjacent computer systems.

g) Ensure that the seating plan (client system number against registration number) is finalized and the directions are clearly laid out to guide the candidates to the assigned hall and designated seat after verification of Admit Card.

h) Ensure that the identity of the seat of a candidate is as per the seating plan (example: C1, C2...) is clearly visible to candidates so that they can locate the system assigned to them easily upon entering the exam hall (for each session).

i) Ensure that the registration number displayed on each client system is the same as that of the candidate allocated to the system.

3. OPERATIONS ON THE EXAM DAY

3.1 Server Room Operations:

a) IRs must ensure that all the Server Room operations are carried out strictly according to the time schedule of operations given in Annexure **A - 1**.

b) With the help of VCO/System operator, IR should set up alpha-numeric **IR Password (called as Security Password)**. This password is to be used for authorizing critical operations such as giving compensatory time to a candidate, starting the exam, enabling the zoom option to candidates, etc. Please do not share it with anyone other than IRs and **DO NOT** forget the password. **Note down the password before it is set in the server**.

c) Ensure that the QP Bundle is downloaded by Exam Platform service provider from their Data Centre using the Drive password. In case, this operation is not successful within 5 minutes of the stipulated time, IRs must consult the Zonal Chairperson. The bundle password should be auto populated from the Organizing Institute. In case the bundle password does not get auto populated, please consult the Zonal Chairperson.

d) **Ring-the-Bell:** This term denotes the step to set the starting time of the exam. This is an electronic process needed to ensure that the Exam starts at the designated time and MUST be done for the Exam to start as per the set time. This needs the 'IR Password' set by the IR earlier. Under normal circumstances, the IR should "Ring-the-Bell" with the help of System operator 40 minutes before the scheduled start for each session. The time is normally set to the scheduled start time, i.e. 09:30 AM for the Forenoon (FN) Session and 2:30 PM for the Afternoon (AN) Session, candidates can login 20 minutes before this set time (9:10 AM for the FN session and 2:10 PM for the AN session) for reading the instructions. Kindly remember that the system is pre-configured to allow candidates to login 20 minutes before the start of the exam (as set by "Ring-the-Bell"). The timer for every candidate begins counting down the duration of the Exam.

e) Should there be any disruption at the Exam facility before the start of Exam, the IR can delay the start of the session by setting the time accordingly using the "Ring-the-Bell" step. For example, if the IR deems that a 30-minute delay is necessary for the FN session to begin because of a failure of Exam facilities, he/she can designate that the Exam should begin at 10:00 AM instead of the scheduled 09:30 AM. This will result in the candidates being allowed to login at 09:40 AM instead of at 9:10 AM and the Exam to begin at 10:00 AM instead of at 09:30 AM. Refer Annexure **A - 4** to understand all the possible disruptions and how to deal with them. Please report such disruptions in **Form B5.**

1.2 Registration of Candidates

a) The candidates are allowed to login until 30 minutes after the scheduled time of commencement of Exam (10:00 AM for FN session and 3:00 PM for AN session). However, no extra time will be given to these candidates and the time remaining/ available for these candidates upon login would be displayed accordingly. The Exam would end automatically for such candidates at the scheduled time along with the other candidates. *Candidates will not be allowed to enter the exam centre 30 minutes after start of the exam.*

b) In case of major disruption, even if the exam starts beyond 30 minutes of the scheduled starting time, the candidate should NOT be allowed to login after 30 minutes from the scheduled start time (unless permitted by the Zonal Chair).

c) After the commencement of exam, if a computer system allotted to a candidate

malfunction and cannot be rectified quickly, System operator will allot another system from the Reserve Pool to the candidate. The timer for the candidate will automatically stop during this process as a result of which the candidate does not lose any time due to the malfunction. As a result, the exam for this candidate will end a little later depending on the time taken to allot a new system.

d) The Exam ends automatically for each candidate once the clock of his/her system counts down to zero.

3.3 Conduct of examination

a) The VCO & PO, in consultation with the IRs, must assign Invigilators to exam halls in each session.

b) Exam Platform service provider will provide scribble pads for rough work to each candidate. These scribble pads will be handed over to the Invigilators before the start of the Exam, who in turn would distribute them to the candidates. The candidate should write down his/her name and registration number in the scribble pad. These pads MUST be collected back by the Invigilators from all the candidates at the end of the Exam. Before giving another Scribble Pad, the Invigilators should collect the first one.

c) After the announcements by the Invigilators as per the time schedule given in Section G - 4, the candidates would login into the computer systems, read the instructions and wait for the start of the exam at the scheduled/set time of commencement of exam.

d) After 30 minutes of the actual start of the exam, the Invigilators should start taking the attendance. After getting the signatures on the Roll List, the attendance as recorded in these sheets should be cross-checked with the attendance list visible on the server. If there is any discrepancy, then IRs have to find out the reason for the same and take appropriate actions.

e) IRs must physically verify the candidates using Verification Records. Any mismatch of identity should be recorded in the appropriate form(s).

f) List of Absentees in the Roll List after verification with the data in Primary server should be filled in Form A3.

g) Fill the forms as applicable. The forms are self-explanatory, but additional information required to handle unusual cases are given in Annexure A - 3. Some important information regarding forms is given below:

- Form B1 should be filled for all those candidates who have been already marked as Provisional, in the Admit Card as well as Verification Record. In addition,

Form B1 might have to be filled for candidates with minor mismatch in identity, due to issues with photo/signature in ID card, Admit Card, etc.

- Form B2 should be used only if the candidate's identity cannot be ascertained with the records available on the exam day. The entries in Form B2 would correspond to doubtful identity, as evident from the description of the form. Hence, B2 should not be filled for minor mismatch in name or minor defects in photo/signature/ID card. The entries made in B2 should also be accompanied by the photograph of corresponding candidate, signature of the candidate and a reason for doubting the identity.
- Form B3 should always be accompanied by a detailed explanation of the situation (preferably signed by candidate) duly signed by the Invigilator(s) and PO/DPO.

h) Candidates should not be allowed to leave the Exam Lab before the scheduled end of the Exam, i.e., 12:30 PM for FN session and 5:30 PM for AN session. Only in exceptional circumstances (e.g. serious illness or any other medical emergency), the IRs after getting approval from Zonal Chair, can permit a candidate to leave early.

4. POST EXAMINATION OPERATIONS & MATERIAL HANDING OVER

a) All forms (A and B) which have been used should be signed by PO and IRs.

b) Ensure that the **Summary sheet** of the **Roll List** is **signed by the PO**.

c) Save the required information on the USB as discussed below:

USB:

- Create a folder with name as the Centre Code.
- Create a folder for each session. Name it as "FN" for forenoon and/or "AN" for afternoon session.
- Create a subfolder for each LAN with names as "LAN1", "LAN2".
- **Save** the Responses, Audit logs, Biometric data of all candidates in the appropriate subfolder for each session. Ensure that the files are not of size "0 bytes".
- Create a subfolder with name of "Photo ID**". Save** e-copies of Photo ID of Exam Platform service provider and Centre Personnel.
- Create another subfolder with name of "Candidate Photograph". **Save** the photographs of the candidates in accordance with Form - B2. Note that the **filename of the photograph** should be **same as the Registration Number** of the candidate.

- Create a subfolder for with name of “Scribe”. Photograph should be saved in “<CentreNo><EnrollmentID>.jpg format.

d) The following items need to be submitted to the EXAMINATION Office on return:

i. Pouch containing sealed envelope of USB
ii. Roll List for each session
iii. All filled forms (A and B) should be signed by PO and IRs
iv. All Verification Records
v. Seating plan for each session (from Exam Platform service provider)
vi. Declaration of the information of honorarium by Centre Personnel
vii. Centre File

Roll List, Pouch containing USB, Forms Booklet (only filled pages) need to be packed together in a big sized envelope. If required, you may use multiple envelopes and number them. Signature of PO and IRs is essential on all sealed envelopes. The sealed envelope(s) need to be submitted to the EXAMINATION Office on your arrival.

If a centre has examinations on Saturday and EXAMINATION examinations on Sunday, the materials are to be packed separately (as above).

IRs are requested to fill the online feedback form ‘Centre and Exam Assessment Report’, to be sent by EXAMINATION Office at the end of Examination.

5. EXPENDITURE AND SETTLEMENT OF ADVANCES

a) The contingency advance given to the IRs can be used to meet local conveyance between the place of accommodation and examination Centre/railway station/ airport (if taxi is not arranged by EXAMINATION office) and other contingency expenditure at the examination Centre. A detailed account must be maintained along with the receipts. The form for “**Settlement of Advances for Contingency Expenses**” will be provided at the EXAMINATION office and should be filled to settle the advance within three days of their return from the examination duty.

b) All the IRs need to submit the form for “Settlement of Institute Representative Advance (Form IR)” to settle the advance amount transferred to their bank accounts along with TA form (for travel only), within three days of their return from the examination duty.

The IRs may feel free to contact the EXAMINATION Office for any further clarification or assistance in the above context.

Organizing Chairperson, EXAMINATION 2024, takes this opportunity to sincerely thank you for the kind help and cooperation in conducting the EXAMINATION 2024 Computer Based Test.

B. Guidelines For Exam Platform Service Provider's Venue Commanding Officer (VCO)

The VCO and System operator are staff members of Exam Platform service provider. They are responsible for operations related to the exam process in the server room and exam halls. The responsibilities of VCO and System operator are as follows:

a) Ensure the availability and readiness of the infrastructure required for the conduct of Exam.

b) Ensure the following on each of the client systems:

   (i) Loading the required OS needed to run the exam

   (ii) Good connectivity in the LAN

   (iii) Access to the Primary server and the Backup server

c) On the day before Exam and in the presence of IRs, conduct the mock test using the machines assigned (mapped) to ALL candidates of a session with maximum count at that Centre.

d) Ensure that candidates are allocated to the systems in a Lab in the serial order of their registration number and that the candidate can easily locate his/her client system when they enter the Exam Lab. Put up system numbers (say C1, C2, ….. etc.) on Partitions for each of the client systems for easier identification of the mapped system.

e) Consult the PO/DPO or IRs in case of any difficulty or any unusual situations during the dry run/examination and take necessary action.

f) On the day of the Exam, please report to the Centre **latest by 6:30 AM**

g) Perform the following operations at least 150 minutes before the start of the Exam in a session:

- Ensure that the Primary server and Backup server are working.
- Ensure that all the client systems, including the reserve systems, are started and working properly.
- Run the OS (iLeon/Netboot) on all the client systems and keep the login screen for candidate ready.

- Ensure that the registration number displayed on each client system is the same as that of the candidate allocated to the system.

h) Perform the following operations as per the time schedule given in Annexure A - 1.

(i) Download the question paper material for the test papers of the respective session.

(ii) After the successful download, you would require the Bundle Password when you deploy the QP bundle. This password will be auto populated from the Organizing Institute.

(iii) Help the IRs to set up IR Password (Security Password) on Exam Platform service provider's Server.

(iv) Seek the approval of IRs for the start of the Exam Paper as per the time schedule in "Ring-the-Bell" operation. *Do not begin the exam until the start time is confirmed by the IRs.*

(v) Deploy personnel at the document-verification desk (two desks in case there are more than 200 candidates in the Centre) 90 minutes prior to the Exam time. Persons at the document-verification desk must verify the identity of the candidates with Admit Card and the ID proof; check the candidate's name in the list provided and direct him/her to the respective Lab.

i) Be available in the server room or exam halls throughout the duration of exam in a session. **No other personnel are allowed into the Server Room apart from the IRs, VCO and System operators during the exam.**

j) Monitor periodic saving of data from client systems on the servers.

k) The attendance recorded in the Roll List would be cross checked with the server attendance data. If there is any discrepancy, then the VCO and IRs have to find out the reason for the same and take appropriate action.

l) Attend to the technical problems of the client systems during the exam. If a client system allotted to a candidate has any malfunction that cannot be rectified, allot another client system from the reserve pool to the candidate. If for some reason the need arises for giving additional time to a candidate, do so ONLY in consultation with the IRs.

m) Perform the following operations at the **end of Exam** in each session:

- Ensure that the exam is terminated on ALL client systems. THIS IS CRITICAL!

- End the test drive on all the client systems ensuring that there is no candidate still taking exam. **Be careful** in closing the drive where **PwD** candidates are present with a compensatory time of 60 minutes. The data of such candidates is available with the IR.
- Copy the relevant data (responses, audit trails, biometric data of all the candidates) from the server to the USB drive in the presence of IRs. Use separate folders for each session and subfolders for each LAN.
- Copy the e-copies of the Photo ID proof submitted by the Exam Platform service provider and Centre Personnel into the USB Pen Drive (with the IR) at the end of the day.
- Copy the photographs of Provisional Candidates and Doubtful Candidates (if any) also on the USB Pen Drive.
- Copy the photographs of scribe (if any) into the USB Pen Drive

Organizing Chairperson, EXAMINATION 2024, takes this opportunity to sincerely thank you for the kind help and cooperation in conducting the EXAMINATION 2024 Computer Based Test.

C. Guidelines For Presiding Officer & Deputy Presiding Officer

The PO and DPO are responsible for ensuring the smooth conduct of Exam and monitoring all the personnel engaged for the exam duty at the Centre. The PO and DPO have to coordinate closely with the IRs and the Exam Platform service provider's personnel. The PO and DPO will be responsible for the following:

a) Ensure that the centre and exam halls are ready in all respects for the conduct of exam.

b) Check the availability and readiness of the entire infrastructure required for the conduct of exam.

c) Inform the local police and administration regarding the examination and movement of candidates.

d) Placement of the partitions between the client machines by Exam Platform service provider personnel.

e) Conduct the mock test using the servers and all the required number of client systems in the exam halls, on the day before the exam in the presence of IRs.

f) Test the generators and backup power sources during the mock test. Please ensure that all the personnel, including invigilators, engaged in the EXAMINATION Exam

attend the mock test and understand clearly their scope of work.

g) Display the exam posters provided by the EXAMINATION office, prominently at different locations.

h) Placement of sign boards showing the directions to the exam halls, at appropriate places and displaying the seating plan for candidates outside each hall (for every session).

i) Provide details of exam halls and proper guide have been provided so that the candidates can reach the halls easily from the document-verification desk.

j) Prepare list of all the personnel engaged in the conduct of exam. Ensure that only those listed are present during the sessions. Provide a name tag to all the authorized personnel to easily identify any unauthorized person.

k) Arrange a meeting of all the personnel with the IRs on the day before Exam. During the meeting, explain the role and responsibilities of each person in the conduct of exam.

l) Provide a hard copy of "**Guidelines to the Invigilators**" to all the Invigilators during the meeting. If required, keep a few extra copies to be given to Invigilators on the day of exam.

m) Assign the Invigilators to the Exam Labs in each session randomly in consultation with IRs.

n) On the day of the exam, ensure that the operations in the server room and labs are carried out strictly as per the time schedule given in Annexure A – 1.

o) Issue Scribble Pads (one per candidate) and ball point pens to all the invigilators, 90 minutes before the start of a session.

p) The Invigilators must be requested to inform the IRs/PO/DPO in case of any unusual incidents during the exam and necessary action should be taken only as per their advice.

q) Ensure cleanliness and hygiene in the centre premises, including washrooms.

r) Make necessary arrangements for providing drinking water during the examination sessions.

Organizing Chairperson, EXAMINATION 2024, takes this opportunity to sincerely thank you for the kind help and cooperation in conducting the EXAMINATION 2024 Computer Based Test.

D. Guidelines for Invigilators

The Invigilators are responsible for the conduct of exam in the Exam Labs. There will be one Invigilator for every 30 registered candidates and part thereof at a Centre. An additional Invigilator is provided in labs that have PwD candidates with Scribe.

The Invigilator plays a very important role in EXAMINATION 2024 Computer Based Test.

The responsibilities of Invigilators are as follows:

a) Attend the meeting with the Presiding Officer (PO) / Deputy Presiding Officer (DPO) and Institute Representatives (IRs) on the day before the Exam. It is extremely important that ALL Invigilators attend this meeting and understand their responsibilities.

b) ALL Invigilators must sign a declaration (**Form A2(a)**) that neither their close relatives/ friends nor they themselves are appearing for EXAMINATION 2024 examination or involved in coaching and other activities related to EXAMINATION 2024. e-copy of valid Govt. Photo ID of each Invigilator must be handed over to the PO.

c) Be present during the mock test on the day before the Exam and understand the Exam process.

d) Report to the Centre latest by 7.00 AM for forenoon session and 12.00 noon for the afternoon session.

e) DO NOT carry any reading or writing material, mobile phone or any other electronic gadgets into the Exam Lab during invigilation.

f) DO NOT engage in conversations with other invigilators when the examination is going on as this distracts the candidates. Make full effort to ensure that candidates are not disturbed.

g) At 95 minutes before the start of a session, each Invigilator should collect the following material from the PO/DPO: (1) Roll List of candidates in the Exam Lab assigned for the session, (2) Copy of the Announcement to be made to the candidates in the Exam Lab, (3) Ball point pens (4) Scribble pads for candidates. In addition to the above, a copy of these guidelines may be carried along. Please feel free to contact the IRs or PO/DPO in case a clarification is required on any of the points mentioned in the guidelines or in the announcement to the candidates.

h) Ensure that the partitions between the client systems are placed properly.

i) Be present in the Exam Lab for the invigilation until completion of Exam and maintain a secure, professional, quiet, and controlled environment at all times.

j) Ensure that the candidates write their registration numbers and names on the scribble

pads given to them and they do not exchange the same with each other.

k) Ensure that the candidates do not start using the system until the announcement about the Exam process is made.

l) Ensure that the candidates are not communicating in any way with each other during the Exam.

m) Ensure that the candidates are seated by 8:50 AM for forenoon session and 1:50 PM for afternoon session, before the announcements are made. The candidates can login at 9:10 AM for forenoon session and 2:10 PM for afternoon session.

n) Ensure that each candidate has the print-out of the admit card supported by a valid, original photo identity proof such as Aadhar UID, Voter's ID card, Driving Licence, Passport, PAN card. Photocopies of these documents, or expired documents should **NOT** be accepted.

o) In case the candidate do not possess the admit card and/or valid original ID proof, the matter must be referred to the PO/DPO/IRs.

p) Ensure that candidates do **NOT** possess any material other than the print-out of Admit Card, Original Photo Identity Proof and Pen/Pencil. Scribble Pads for EXAMINATION 2024 are provided by Exam Platform service provider's personnel.

q) VIRTUAL CALCULATOR IS PROVIDED ON THE CANDIDATES COMPUTER SCREEN. HENCE NO CALCULATOR OR ANY OTHER ELECTRONIC DEVICE IS ALLOWED. SINCE TIME CAN BE SEEN ON THE MONITOR, HENCE NO WATCH IS ALLOWED.

r) In case any candidate is found using unfair means, immediately note it and inform the IRs as soon as possible. Invigilators should not get into verbal argument with the candidate. If required, furnish a signed report of the event with the knowledge of the candidate.

s) Begin to check the identity of candidates and record attendance on roll list at 10:00 AM for FN session and at 03:00 PM for AN session. The following tasks are to be completed:

- Check the candidate's identity against the photograph on the admit card, Original Photo ID and the roll list.
- Take the signature of each candidate on the Roll List.
- Ensure that candidates sign only against their name.
- Ensure that the signature of the candidate on the admit card and on the Roll List are the same. Report any discrepancy either in photograph or signature to the PO/DPO/IRs.

t) The absentee list from the Roll List would be verified with the data from the Primary server. Only after the verification, write "**ABSENT**" using a **RED** ink ballpoint pen against the candidates who are absent.

u) **If any candidate complains that the computer is not working properly, before or after login, contact IRs and** Exam Platform service provider's **staff immediately.**

v) Candidates should not be allowed to leave the Exam Lab before the scheduled end of the Exam, i.e., 12:30 PM for FN session and 5:30 PM for AN session. Only in exceptional circumstances (e.g. serious illness or any other medical emergency), the IRs after getting approval from Zonal Chair, can permit a candidate to leave early and the Invigilator should perform the following operations:

(i) Inform the System operators to lock the client system of the candidate, in the presence of the candidate and the IRs.

(ii) Collect signature of the candidate on the Roll List and Scribble pad.

(iii) Make sure that the candidate fills Form B4.

w) After the scheduled completion of Exam, the Invigilator should ensure that a message indicating closure of Exam is displayed on the monitor of each client system. In case of any unusual situations during the Exam, report to the PO/DPO and IRs for the necessary action to be taken.

x) The Invigilator must collect the scribble pad from each candidate and submit the same in the control room. Strictly follow the time schedule given below.

Activity	**FN Session**	**AN Session**
Candidates allowed into the Centre for document Verification at the Registration Desk	08:00 AM	01:00 PM
Invigilators read out the '**Announcements by the Invigilators**'	09:00 AM	02:00 PM
Candidates are allowed to login and read the instructions	09:10 AM	02:10 PM
Commencement of Examination	**09:30 AM**	**02:30 PM**
Closure of Candidate entry into the Examination Hall and last login time	10:00 AM	03:00 PM
Invigilators start taking attendance by collecting the signatures of candidates on the roll list	10:00 AM	03:00 PM
Collection of Roll List from the Examination halls	10:30 AM	03:30 PM
Examination ends for all the candidates		
(except those given compensatory time)	**12:30 AM**	**05:30 PM**
Examination ends for the candidates with compensatory time	**01:30 PM**	**06:30 PM**

E. Computer Based Test Process Schedule

FN Session	AN Session	Activity
6:30 AM	11:30 AM[#]	Exam Platform service provider's Personnel and Technical Staff report at the Test Centre
6:30 AM	11:30 AM[#]	PO and DPO report at the Test Centre
7:00 AM	12:00 PM[#]	Invigilators report at the Test Centre
7:00 AM	12:00 PM[#]	IRs report at the Test Centre
7:45 AM	12:45 PM	IRs inspect and ensure readiness of the infrastructure including servers, client systems, network, UPS and generator
7:55 AM	12:55 PM	Distribution of material to Invigilators
8:00 AM	1:00 PM	Entry of Candidates in the Centre after document verification
8:15 AM	1:15 PM	Candidates are allowed to complete Biometric Registration in the exam hall
8:30 AM	1:30 PM	System operator configures the drive[$], enters the drive password, and configures the Backup server
8:45 AM	1:45 PM	IR to set up IR Password on the Exam Platform service provider's Server
8:50 AM	1:50 PM	Bundle Password will be auto populated[$]
8:50 AM	1:50 PM	IRs and Exam Platform service provider's System operator will set the 'Ring the Bell' for respective sessions
8:50 AM	1:50 PM	System operator will click on 'Allow candidates to log in' on Primary server
9:00 AM	2:00 PM	Invigilators to read out Announcements
9:10 AM	2:10 PM	Candidates are allowed to login to read instructions
9:30 AM	2:30 PM	Commencement of Exam
10:00 AM	3:00 PM	Security gates are closed, candidates are not allowed to enter

FN Session	AN Session	Activity
10:00 AM	3:00 PM	Invigilators to start taking attendance on Roll List
10:30 AM	3:30 PM	Invigilators finish taking attendance on Roll List
11:30 AM	4:30 PM	IRs carry out physical verification using the Verification List
12:30 PM‡	5:30 PM‡	Exam ends automatically for candidates without compensatory time
12:35 PM‡	5:35 PM‡	Upload of the responses of candidates and audit trails to the Master Control Facility
12:45 PM‡	5:45 PM‡	Handover of with Responses, Audit Logs, Biometric Data to IRs

This time is applicable only when the examination at the centre is in the afternoon session only.

$ Contact Zonal Chairperson in case of any Internet issue for this operation.

‡ Post Exam activity is delayed by one hour in case of PwD candidates with compensatory time.