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Ring-fence the exam: Why the examination system needs an end-to-end technology backbone

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Article Content:

India handles more than 10 crore exam applications every year, across school boards, entrance tests and recruitment exams. For millions of families, a single exam is the main road to a better life. In NEET-UG alone, about 23 lakh students compete for roughly one lakh medical seats, and many families spend lakhs on coaching. So, a paper leak can cost students a whole year and money, and a public loss of faith in the entire system.

The Parliament passing the Public Examinations (Prevention of Unfair Means) Amendment, 2026, strengthens the 2024 law. Jail terms rise from 3–5 years to 5–10 years. The maximum fine on an individual goes from ₹10 lakh to ₹50 lakh; on an exam service

provider, from ₹1 crore to ₹5 crore, with an eight-year ban from conducting exams and jail for its senior managers. It also adds fast-track courts, a two-month limit on investigation, and a special task force for cross-state rackets.

Will a tougher punishment, on its own, stop the next leak?:

- The Act directly applies to specified central public examination authorities, including UPSC, SSC, RRBs, IBPS and the NTA. But State-conducted examinations are not automatically brought within its ambit begging the question will safeguards be adopted at the State level?
- Candidates are governed under concerned examination authority, rather than on a uniform statutory entitlement. Where an examination is cancelled or disrupted through no fault of the candidate - guaranteed re-examination, preservation of an attempt or other forms of redress depend on the examination authority.
- Finally, the legislation is designed to address conduct such as paper leaks, impersonation, tampering and other specified forms of unfair means. Yet evaluation-related errors can affect the credibility of results even in the absence of intentional wrongdoing.

What must be done to ring fence the examination system to prevent paper leaks?:

While legislation on paper leak strengthens the legal framework around wrongdoing by making prosecution of malpractice more time-bound and increasing penalties for serious offences, it is important to ring fence the examination system. The move to CBT in 2027 should not be a single technology intervention, but an end-to-end technology change for a secured and managed examination. Some asks from ring fencing would be to:

- Secure exams so that the content won't be revealed before the day of the exam
- Have data security protocols related to paper setting process to negate human error
- Create an objective process with zero ambiguity and bias in interpreting test results and process
- Improve process for efficiencies in time, budget, control, risk and sensitivity
- Invest in a water-tight proctoring process to negate human interference
- Negate fear of impersonators and settle public doubts on the sanctity of the exam
- Define SOPs and monitoring process to track compliances

Computer Based Test (CBT) will minimise bias and ambiguity and will allow students to take tests on a computer which will negate human error and questionable human interference. Analytics will allow objectivity in granting compensatory marks; and 'time lost' claims and other anomalies, can be settled quickly, objectively and fairly using computer logs.

Randomised AI generated test papers on the day of the examination when the student commences the test will eliminate risk of leaks. Developing extensive question banks

and employing algorithms to generate unique question sets for different candidates can minimize the impact of any potential leak.

Blockchain's decentralized and immutable nature will improve exam paper security and will ensure that once exam papers are uploaded, they cannot be altered or accessed without proper authorization.

Proctoring software can be used in computers on which candidates take the exam. In addition, enhanced practices of proctoring examination centres can be introduced.

AI-Powered Surveillance to monitor exam centres in real-time can help detect and prevent malpractices. AI can analyse surveillance footage for suspicious activities and alert authorities instantly, ensuring swift action against any attempts to compromise the exam

Biometric Verification such as fingerprint or facial recognition for candidate verification can prevent impersonation and ensure that only registered candidates are allowed to sit for the exams.

Encrypted Communication Channels and Digital Signatures can ensure that examination papers are encrypted both in transit and at rest, coupled with digital signatures to verify authenticity, can prevent tampering and unauthorized access.

Lessons from a Multi-Layered Model for Examination Trust:

The State Common Entrance Test (CET) Cell, Maharashtra state offers a template for examination integrity at scale. The State CET Cell has grown from serving under 10.4 lakh candidates (2021) to over 14 lakhs by AY 2025–26, delivering 7.8+ lakh confirmed admissions annually across 72 courses, without a single major breach disrupting an exam and admission cycle. The entire process, from candidate registration through seat allotment to final confirmation of admission in colleges, is conducted through a single portal.

Maharashtra's success comes from a layered digital architecture rather than a single fix. A CBT engine delivers exams uniformly, while encryption and decryption protocols reduce the risk of relying on one question paper. A structured question bank, backed by clear SOPs for setters and moderators, strengthens content creation, and an Objection Tracker makes grievance handling more transparent. Biometric and facial recognition, frisking, live CCTV, QR-based credential checks and Aadhaar-linked authentication tighten candidate and centre security. Planned additions for 2027 like blockchain-verified credentials, an AI-enabled NLP helpdesk, APAAR and DigiLocker integration, an AI-based predictive recommendation engine, and four-layer protection across critical components reflect a continuous, evolving approach to examination integrity.

Getting the Examination Integrity Story Right:

Quick fixes at scattered points in the process will not hold. What India needs is a closed loop. This is why law, technology and institutional design must move as one. And on NEET, one paper on one day for 23 lakh candidates makes that paper worth a fortune. JEE Main already runs two sessions with best-of-two scoring, NEET could do the same.