20 questions on EVMs answered

It's been over two decades since the EVM widely replaced paper ballots in Indian polls. However, the device keeps facing fresh scrutiny after every election. The latest attack has come from Congress following its drubbing in Maharashtra, but BJP stalwart LK Advani, too, had expressed doubt over whether the machines were foolproof in the aftermath of the 2009 LS polls. Senior IPS officer in Maharashtra govt and cybersecurity expert **Brijesh Singh** answers the standout questions

1. Can the EVM chip be pre-programmed to favour a particular party?

■ The microcontroller in EVMs is 'One-Time Programmable (OTP)', meaning it can be programmed only once. This programming occurs under strict supervision of a Technical Experts Committee and the source code is audited by independent experts. Before each election, mock polls with over 1,000 votes are conducted, allowing political parties to check that votes are being recorded properly. Hence, it is impossible to pre-program it to favour anyone.

2. Can malicious code be inserted during maintenance or software updates?

■ EVMs do not accept software updates post manufacturing. The program is burned into the OTP chip, which cannot be modified once set. There are no external input ports, and maintenance is purely physical and mechanical, ensuring that no software alterations can be made.

3. Can EVMs be programmed to transfer votes after a certain number has been cast?

■ No, the OTP chip cannot be re-programmed and records each vote exactly as cast without any conditional logic. Security protocols are in place to prevent such alterations.

4. Can the machine be hacked through the display unit?

■ The display unit is output-only and has no input capabilities. It is hard-wired to display information and cannot be used as an interface for programming/altering the EVM.

5. Can multiple votes be registered fraudulently?

■ The control unit enables voting only after the presiding officer presses the 'Ballot' button, and there's a mandatory 5-second wait between votes. This mechanism ensures that each vote is recorded individually and prevents the casting of multiple votes.

6. How do we verify if an EVM malfunctions during voting?

■ EVMs have continuous self-diagnostic features and provide visual and audio indicators for any error. If a malfunction is detected, the machine locks down to preserve vote data, and back-up machines are used.

7. Can EVMs be hacked using wireless signals or Bluetooth?

File picture of an EVM strongroom in Chennai

■ Indian EVMs do not have any wireless component and also lack internet connectivity, Bluetooth, or external ports. They are designed to be 'air-gapped', meaning they are physically isolated from any network, making them immune to remote hacking attempts.

8. Can magnets or electromagnetic pulses manipulate voting data?

■ EVMs are designed with electromagnetic shielding, meeting military-grade standards. They are immune to strong electromagnetic fields. This ensures that external magnetic fields cannot alter the stored voting data.

9. Can an EVM's memory chip be accessed directly?

■ The memory is encrypted using AES-256 and is physically secured within the machine. Tamper-evident seals cover the memory area, and any attempt to access the memory directly would damage the seals and be immediately detected, rendering the machine invalid for use.

10. Can votes be changed during result transmission?

■ Results are first recorded physically on EVMs and then transmitted through secure channels. Multiple copies of results are maintained, including the Voter-Verifiable Paper Audit Trail (VVPAT), which can be used for cross-verification.

11. What prevents the maker from building hidden backdoors in EVMs?

■ The manufacturing process is overseen by multiple agencies, including independent security auditors. Components are verified at each stage, and the final assembled units undergo extensive testing by different teams to ensure there are no vulnerabilities/backdoors.

12. What prevents an insider from tampering with the machine before election day?

■ EVMs are stored in secure strongrooms with 24/7 CCTV surveillance and armed security from multiple independent (central and state) agencies. They have tamper-evident seals with unique serial numbers, and a two-stage randomisation process ensures that no one knows which EVM will be used where until the last moment.

13. How do we know votes aren't being changed when the machines are in storage?

■ EVMs are stored in secure rooms that have 24/7 CCTV surveillance, three-tier security (including armed guards), a double-lock system with keys held by different officials. Also, party representatives can place their own seals on the doors and continuous logs are maintained of those accessing the room, which requires the presence of authorised personnel and party representatives.

14. What if someone replaces an original EVM with a duplicate one?

■ Each EVM has unique serial numbers, digital signatures, holographic seals, and key codes. During First-Level Checking (FLC), these identifiers are verified and documented in the presence of party representatives. These details can be cross-checked before polling begins to ensure authenticity.

15. Are votes lost if the battery dies during voting?

■ EVMs have a robust battery system with a 48-hour backup and non-volatile memory that retains data without power. Redundant power systems ensure that even in case of battery failure, voting data remains intact.

16. Does the varying level of battery capacity (charge level) in EVMs at the time of counting indicate any possibility of hacking?

■ The '99%' display is not a battery charge percentage but rather a voltage threshold indicator that shows '99%' whenever the battery voltage remains within the optimal operating range of 7.4V-8.0V. This is purely an administrative feature to indicate proper functioning voltage levels. EVMs use non-rechargeable alkaline batteries (7.5V/8V configuration) with vote data stored in non-volatile EEPROM memory, meaning vote storage and counting are completely independent of battery status. The power system is entirely isolated from the vote-recording circuit, making it technically impossible for battery status to influence vote patterns or counting sequence. Furthermore, each EVM's data integrity is verifiable through VVPAT audit trails, regardless of power status.

17. How are EVMs protected against extreme climate?

■ EVMs are designed to operate in a wide range of temperatures (from -10°C to +55°C) and under high humidity levels (up to 95%). They are also tested for resistance to heavy rain.

18. How does VVPAT ensure vote verifiability?

■ VVPAT provides a physical paper trail that voters can see and verify immediately after casting their vote. This paper record is stored securely and can be used for audits or recounts.

19. How do we know if the random sampling of VVPAT slips is truly random?

■ The process uses computerised random number generation, and the selection is conducted in the presence of representatives of political parties. This ensures transparency and fairness.

20. How can illiterate voters be sure their vote has gone to the candidate of their choice?

■ EVMs feature large, clear symbols and party names, with audible beep confirmations for votes. VVPAT gives visual confirmation of votes cast and Braille markings assist visually impaired voters.

EC disqualifies foreign national, HC overturns it

Bihar SEC Moves SC Challenging HC Order

Dhananjay.Mahapatra
@timesofindia.com

Patna high court said it was the Union govt which alone could decide the citizenship and nationality of a person

New Delhi: Is Election Commission powerless to disqualify a foreign national who has got elected as a gram panchayat mukhiya, despite unimpeachable evidence about his nationality?

This question of law was raised by Bihar State Election Commission before the Supreme Court on Monday. A Nepalese citizen had written to the Nepal govt to cancel his citizenship. But prior to its cancellation, he contested and won the 'mukhiya' election in a Bihar gram panchayat. Patna high court overturned the SEC's decision to disqualify him saying it was the Union govt which alone can decide citizenship and nationality of a person.

The SEC challenged the high court order before the Supreme Court and a bench of Justices Surya Kant and Justice Ujjal Bhuyan impleaded Union of India as a party and sought its response by Dec 9. The high court had ruled that SEC did not have the power to decide the disqualification of a candidate either before or after the elections, excluding an election dispute.

As per the SEC appeal, one Biltu Ray aka Bilat Ray aka Bilat Prasad Yadav was a citizen of Nepal in 2006-07 and held a valid Indian passport from Oct 25, 1996, till Oct 24, 2006. He never applied for renewal of the passport after its expiry. In March 2016, he filed an application with Nepalese authorities seeking to relinquish his Nepalese citizenship.

In Oct 2021, he filed his nomination for the post of Mukhiya of Bhuluaha gram panchayat without disclosing that he is a citizen of Nepal. In Dec 2021, he was elected as Mukhiya. His nearest rival Mukesh Kumar complained to SEC that Ray is a Nepalese citizen. A year and four months later, on March 21, 2023, the home ministry of Nepal cancelled Ray's Nepalese citizenship. On May 30, 2023, he was removed from the voter list of Nepal.

SEC said prior to cancellation of Nepalese citizenship, Ray had contested the elections while suppressing the fact that he at that time was a Nepalese citizen. By an order of April 1 this year, SEC disqualified him from contesting elections under Bihar Panchayati Raj Act. It said Ray failed to provide any proof of Indian citizenship and rejected his claim that he had unknowingly acquired Nepalese citizenship. The SEC's order was set aside by the Patna high courton Sep 12.

2 dead, 1 hurt in Budgam landslide

Two migrant labourers died while another was injured after getting buried under a landslide in Ichgam area of central Kashmir's Budgam Monday. All three are from Bihar, officials said, reports **Saleem Pandit**. Budgam chief medical officer said the labourers had been working at the site of a ring road project when the accident occurred.

Police registered a case and initiated an investigation.

U.P. MEDICAL SUPPLIES CORPORATION LTD.
(CIN: U85318UP2018SGC102425) (A Government of U.P. Undertaking)
Regd. Office: SIDDA Bhawan, 7/23, Sector-7, Gomti Nagar Extension, Lucknow-226010
Tender Ref. No: UPMSCL/Fin/2024-25/4152/038 Dated: 29.11.2024

Tender Notice

E - TENDER FOR THE SUPPLY OF INTERNAL AUDIT SERVICE TO UTTAR PRADESH MEDICAL SUPPLIES CORPORATION LIMITED

Online tenders are invited from chartered accountants/cost accountants firms for internal audit service to UPMSCL. The details of tender, and Tender Documents are made available on website **https://etender.up.nic.in** and **www.upmsc.in**. The last date/time of online submission of the tender document is **21/12/2024 upto 15:00 Hrs.**

Managing Director
UPMSCL, Lucknow, Uttar Pradesh
Department of Medical Health & Family Welfare, U.P.

UN calls for data sharing to combat space junk

New Delhi: Space experts have cautioned against the exponential rise in satellite launches in the low earth orbit (LEO) and resultant increase in space junk that will make the orbit unusable in coming years. However, they said alarming traffic situation can be tackled if companies and countries cooperate and share data needed to manage the most accessible region of space, reports **Surendra Singh**.

A United Nations panel on space traffic coordination in late Oct said urgent action is necessary and called for a comprehensive shared database of orbital objects as well as an international framework to track and manage them.

More than 14,000 satellites, including some 3,500 inactive satellites, surround the globe in LEO, showed data from US-based Slingshot Aerospace, an analytics company that uses AI to analyse data from satellites. Alongside those are about 120 million pieces of debris from launches, collisions and wear-and-tear of which only a few thousand are large enough to track.

"There's no time to lose on space traffic coordination. With so many objects being launched into space, we have to do everything we can to ensure space safety, and that means facilitating the sharing of information between operators, be they public or private, in order to avoid collisions," panel co-chair Aarti Holla-Maini, director of the United Nations office for outer space affairs told the media.

LEO is now viewed as the world's largest garbage dump. Most orbital debris comprises human-generated objects, such as pieces of space craft, parts of rockets, satellites that are no longer working, according to Nasa.

Unfortunately, there are no international space laws to clean up debris in LEO. It's expensive to remove space debris from LEO because the problem of space junk is huge — there are close to 6,000 tonne of materials in the orbit.

Petrol Pump Dealerships Notifications
www.petrolpump-ksk.com

NOTICE FOR APPOINTMENT OF REGULAR/ RURAL RETAIL OUTLET PETROL PUMP KSK DEALERSHIPS

NOTICE FOR APPOINTMENT OF REGULAR/ RURAL RETAIL OUTLET PETROL PUMP KSK DEALERSHIPS

www.petrolpump-ksk.com proposes to appoint Retail Outlet dealers at various locations of India.

The detailed Advertisement and Brochure are available in the website **www.petrolpump-ksk.com**

Application for Retail Outlet dealership along with online payment of refundable application fee, as applicable, should be submitted on-line by date **23.12.2024**.

The facility for submission of on-line application will be withdrawn immediately after the cut-off date as mentioned above.

APPLICANTS, IN THEIR OWN INTEREST, SHOULD CAREFULLY GO THROUGH THE "BROCHURE" AND UNDERSTAND CONDRIONS OF SELECTION BEFORE SUBMITTING THEIR APPLICATION.

The Corporation reserves the right to cancel/withdraw/amend this advertisement or extend the due date at its sole discretion without assigning any reason.

In case of any discrepancy in advertisement published in English Newspapers vis-a-vis vernacular dailies, the direction/information Indicated in English paper would prevail.

Corrigendum, if any, will be published only in the website **www.petrolpump-ksk.com**

For purchase of Brochure and any information with regard to the advertisement, candidates may contact the following address: - **support@petrolpump-ksk.com**

S.N.	Advertisement for Locations	Division	Help-Desk
1.	For All States and Union Territories of India	Mumbai	022-48903516

GOVERNMENT OF TAMILNADU
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
SUPERINTENDING ENGINEER, WEST CIRCLE – COIMBATORE

NOTICE INVITING E- TENDER

Name of the work: Construction of 240 no. of tenements adopting Type design No. 85/2019 (R), 85D1/2019(R), 85F/2019(R) (G+5 Storeyed) with internal water supply, Sanitary and electrification arrangements with development works at Variety Hall Road Phase II scheme in Coimbatore Corporation under HFA-AHP

(TENDER REFERENCE No. 442/WC/DB/2024)

The Superintending Engineer, West Circle Coimbatore on behalf of Tamil Nadu Urban Habitat Development Board invites submission of online bids from eligible bidders for the contract package named above. Bids are invited under two cover system to be uploaded in the online web portal **https://tntenders.gov.in**

Detailed Notice of Invitation of Bids and the Pre-Qualification Criteria and the Bid document for the above package would be available at **https://tntenders.gov.in** starting from **10.30 A.M**. on **03.12.2024** Deadline of bid submission is upto **12.00 Noon** on **17.12.2024.** All required information is provided in the bid document.

Bidders may contact **Superintending Engineer, West Circle, Coimbatore,** and TNUHDB through **Email: tnuhdbcbecircle@gmail.com** for any other information on bidding process.

Superintending Engineer
TNUHDB, West Circle Coimbatore

DIPR/5244/TENDER/2024

CSIR- INDIAN INSTITUTE OF CHEMICAL BIOLOGY
(Council of Scientific & Industrial Research)
4, Raja S. C. Mullick Road, Jadavpur, Kolkata-700 032

Advt. No. : SDP/03/2024-25

CSIR-Indian Institute of Chemical Biology, Kolkata invites applications for various Certification Courses under the "CSIR-Integrated Skill Initiative".
Course Duration : 02 weeks (from 06th Jan. 2025 - 17th Jan. 2025).
Online Application Period : 02nd December 2024 to 18th December 2024.
For online application process : https://iicb.res.in/sdp

Administrative Officer

B N Yugandhar Centre for Rural Studies
Lal Bahadur Shastri National Academy of Administration
Mussoorie – 248 179

The following vacancy of the Centre is to be filled for a period of one year (extendable based on the satisfaction of Centre Director and subject to fund availability) on contract basis:

1. Land Records Expert (01 post)- Remuneration INR 1,00,000/- per month.

Last date of Application: 09 December, 2024.

Detailed advertisement related to eligibility, nature of work, etc. can be seen at https://www.lbsnaa.gov.in/lbsnaa_sub/upload/674d7f61f4ed/Advertisement%20CRS%201.pdf

Centre Director

U.P. COUNCIL OF AGRICULTURAL RESEARCH
Near Govt. Garden, Kariyappa Road, Alambagh, Lucknow-226005

Advertisement Nos.: 1 /2024

Applications are invited from eligible candidates for various posts in different cadres at U.P. Council of Agricultural Research, Lucknow on deputation.

Details of requisite qualifications, terms, conditions & prescribed proforma may be downloaded from **upcar.up.gov.in**.

Secretary
UPCAR, Lucknow

COEP TECHNOLOGICAL UNIVERSITY
(A Unitary Public University of Govt. of Maharashtra)
Shivajinagar, Pune - 411 005

Applications are invited for the post of
Junior Research Fellow (JRF) [2 Positions]
(on Contract / Temporary)

The JRF will be appointed for the ISEA Project Phase-III, sponsored by Ministry of Electronics and Information Technology (MeitY), Govt. of India. Please refer the University website **(https://www.coeptech.ac.in/recruitment/)** for further details, such as qualification, fellowship, specialization etc.
Last date of application is **20th December 2024.**

Registrar

NATIONAL INSTITUTE FOR THE EMPOWERMENT OF PERSONS WITH INTELLECTUAL DISABILITIES (DIVYANGJAN)
(Dept of Empowerment of Persons with Disabilities (Divyangjan)
Ministry of Social Justice & Empowerment, Govt. of India
MANOVIKAS NAGAR, SECUNDERABAD – 500 009
An ISO 9001:2015 Institution
Manovikasnagar, Secunderabad-500 009, Telangana
Tel.No.: 091-40-27751741-745; Fax No. 091-040-27750198; Website: www.niepid.nic.in

EMPLOYMENT NOTICE NO. 02/2024

The Institute invites applications from eligible candidates for the various Faculty and Non- Faculty posts to be filled on regular basis at NIEPID, Secunderabad, its Regional Centres and Composite Regional Centres viz., (i) Lecturer in Special Education (01 Lien Vacancy) (ii) Lecturer in Rehabilitation Psychology (iii) Hindi Translator (iv) Junior Special Education Teacher (01 Lien Vacancy) (v) LDC/Typist, HQs (vi) Hindi Typist, HQs (vii) Library Clerk, HQs (viii) Driver, HQs (ix) Driver, RC, Noida (x) Ayah, MSEC, Noida (xi) Driver, RC, Kolkata (xii) Accountant, CRC, Davangere, etc.

The Institute also invites applications from eligible candidates to be filled on **contractual basis** including posts for **CDEIC** Unit and also intends to empanel professionals/personnel as **guest faculty/staff** on session wise basis on payment of honorarium at NIEPID, Headquarters & its Composite Regional Centres located at Nellore, Rajnandgaon and Davangere functioning under the administrative control of NIEPID.

For complete details regarding Category of the regular posts, details of contractual posts, details of guest faculty positions, educational qualifications, experience, age prescribed for the posts, terms and conditions and to download application forms, please visit Institute's website **www.niepid.nic.in**. Last date for submission of applications is **13.01.2025**. Any modifications/corrigendum/additions in the above notification will be given in Institute's website only.

DIRECTOR (OFFG.)

Sanjay Gandhi Post Graduate Institute of Medical Sciences
Raebareli Road, Lucknow - 226014 (U.P.) India, www.sgpgims.org.in
Phones : 0522- 2668004-8, Fax: 91-522-2668129 / 2668017

Recruitment Notice

Online applications are invited for the following group "A" and "B" posts on Direct Recruitment Basis under Backlog Category.

Online Portal: Website link **www.sgpgims.org.in** will be available in the 2nd **week of December, 2024** (Tentative)

Sl. No.	Name Of Post (Backlog)	Pay Level (as per 7th CPC)	No. Of Post	Specialization	Upper age
	Group A post- by Interview				
1.	Lecturer	Level-11	SC-01	Anatomy	50 year
2.	Lecturer	Level-11	OBC-01	Physiology	50 year
	Group B post - by computer based CRT				
1.	Tutor	Level-10	SC-01	Community Medicine	40 year
2	Tutor	Level-10	OBC-01	Physiotherapy	40 year

The detailed advertisement is available on Institute website **www.sgpgims.org.in**

Advt. No. I/20/Rectt/ 2024-25 **Director**

O-760
ମୁଖ୍ୟ ବିତ୍ତିୟ ଆୟକର କମିଶନର
ମୁଖ୍ୟ ବିତ୍ତିୟ କାର୍ଯ୍ୟାଳୟ, ବ୍ରହ୍ମପୁର
(ଗ୍ରାମ / ପୋଷ୍ଟ- ବାଗୁଡ଼ା, ତାହାଲୀ ବାଗ ଦିଆରେ,
ବ୍ରହ୍ମପୁର - ୭୬୦୦୦୨, ଗଞ୍ଜାମ, ଓଡ଼ିଶା)

OFFICE OF THE CHIEF CONSTRUCTION ENGINEER
RURAL WORKS CIRCLE, BERHAMPUR
(At/Po-Ambapua, Near Income Tax office, Berhampur-760011, Ganjam, Odisha)
(E-Mail :- serwbpr2004@yahoo.com, Tel No. :- 0680-2404287)
E-Mail / E-dispatch

No. e-tender // 3923 // RWC// BAM // Dated. 30/11/24

2nd Corrigendum to Bid Identification No. Online Tender/11-2024-25/BPR

1) The partial modification of Road works under **MMSY-CUVDA** vide above identification has been made as follows.

1	Date of availability of tender	**20.12.2024 to 03.01.2025 upto 5.30 PM** instead of 02.12.2024 to 16.12.2024 upto 5.30 PM.
2	Last Date & Time of seeking tender clarification	**01.01.2025 at 5.30 PM** instead of 13.12.2024 at 5.30 PM
3	Date of opening of Technical Bid.	**04.01.2025 at 11.00 AM** instead of 17.12.2024 at 11.00 AM
4	Date of opening of Financial Bid	**Will be intimated later on.**

All other contents will remain unchanged.

Sd/-
Chief Engineer
R.W.Circle, Berhampur
DIPR/2501/11/0021/24-25

B-713
OFFICE OF THE SUPERINTENDING ENGINEER
BHUBANESWAR (R&B) DIVISION NO II BHUBANESWAR
eerb2_bbsr@yahoo.com

INVITATIONS FOR BIDS THROUGH e-Procurement

Bid Identification No- C.C. (R&B) - 02
e - Procurement Notice No. 27 of 2024-25

The Superintending Engineer, Bhubaneswar (R&B) Division No-II, Bhubaneswar on behalf of the Governor of Odisha invites percentage rate bids for **One** Number works to be received in online bidding, **Single** cover system as detailed in: https://tendersorissa.gov.in. The details of bid documents will be available in the above website from **06.12.2024 to 5.00 P.M of 20.12.2024**. The bidders must possess compatible Digital Signature Certificate of Class II or III. Bids received online shall be opened at 11.00 A.M. of **21.12.2024** in the Office of the Superintending Engineer, Bhubaneswar (R&B) Division No-II, Bhubaneswar. Further details can be seen from the e-procurement portal www.tendersorissa.gov.in Addendum / Corrigendum, if required, will be available only in the Website.

Sd/-
Superintending Engineer,
BBSR (R&B) Division No.II, BBSR
DIPR/3488/11/0018/24-25

OCPL Odisha Coal and Power Limited

ODISHA COAL AND POWER LTD.
(A GOVT. OF ODISHA COMPANY)
Zone-A, Fourth Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar, Odisha - 751023
Ph No: 0674-2300654 / 0674-2300664

NOTICE FOR DISCOUNTED SHORT TERM LINKAGE SALE OF COAL THROUGH E-AUCTION

Ref : EA/09/24 **Dt. 03/12/2024**

Odisha Coal and Power Ltd (OCPL), a State PSU of Odisha is operating Manoharpur Coal Mine in Hemgir Block of Sundargarh District. OCPL intends to place surplus coal for short term linkage sale, in accordance with amended Mineral Concession Rule and MMDR Act. Declared grade of the Mine is G-14. Approx. 1.10 Million ton of Coal of G-14 Grade will be sold through E-auction via MSTC auction portal on 10th December 2024 (indicative) with 15% discount on National Coal Index (NCI) price (Base price).

For further details, interested manufacturing/ power producing industries/ traders may visit our website, i.e., **www.ocpl.org.in**. Any clarification may please be addressed to the undersigned at the above address or by email to: **contracts@ocpl.org.in**

Sd/-
Chief Operating Officer