C-DOT's Sixth Centre of Excellence at IIT (BHU): Research on 6G and Quantum Communication

Preliminary Examination - Practice Questions (1 topic, 3 questions, with answers and explanations) | News context: 23 October 2026 | Published: 26 October 2026

Why in the News

On 23 October 2026, **C-DOT**, the premier research institution of the Department of Telecommunications (DoT), signed an MoU with **IIT (BHU) Varanasi** to establish its **sixth Centre of Excellence (CoE)**; the centre was also inaugurated after the MoU (PIB).

The Centre's Focus

- 5G Advanced/**6G** technologies, ultra-massive MIMO systems, **Integrated Sensing and Communication (ISAC)**, AI-native communication networks.
- **Quantum and post-quantum communication** technologies, cyber security, AI-driven communication systems.

The CoE Network and the MoU

Before IIT (BHU), C-DOT's centres are with **IIT Kanpur, IIT Gandhinagar, IIT Roorkee, IIT Hyderabad, and IISc Bengaluru** (through FSID) - which is what makes this the sixth centre. Director Prof. Amit Patra and EVP Dr Pankaj Kumar Dalela were present at the agreement; CEO Dr Rajkumar Upadhyay described the step as an investment in the country's coming technological capability.

Read the detailed analysis: C-DOT's sixth CoE - full analysis.

Context and Detailed Explanation

The Centre of Excellence (CoE) model means a research institution expands its capacity by spreading it across top academic institutions. C-DOT is the premier R&D institution of the Department of Telecommunications (DoT); at IIT (BHU) Varanasi this is its sixth centre - the earlier five are with IIT Kanpur, IIT Gandhinagar, IIT Roorkee, IIT Hyderabad, and IISc Bengaluru (through FSID). This network matching is a direct Prelims point.

Read the centre's focus areas in two rows: first - 5G Advanced/6G technologies, ultra-massive MIMO (multi-antenna systems), Integrated Sensing and Communication (ISAC - the integration of communication and sensing), AI-native communication networks; second - quantum and post-quantum communication technologies, cyber security, and AI-

driven communication systems. Post-quantum cryptography points to secure communication in the face of future quantum capability.

Event facts: the MoU was signed on 23 October 2026 and the centre was inaugurated right after; Director Prof. Amit Patra and EVP Dr Pankaj Kumar Dalela were present, while CEO Dr Rajkumar Upadhyay described it as an investment in the country's coming technological capability. In the exam, the DoT affiliation, the location of the sixth centre, and the focus areas can all be asked.

Prelims Practice Question

Question 1. Where has C-DOT's sixth Centre of Excellence been established?

(a) IIT Kanpur

(b) IIT Hyderabad

(c) IIT (BHU) Varanasi

(d) IISc Bengaluru

Answer and explanation
Answer: (c) IIT (BHU) Varanasi. The earlier five centres are with IIT Kanpur, IIT Gandhinagar, IIT Roorkee, IIT Hyderabad, and IISc Bengaluru (FSID).

Question 2. C-DOT is the research institution of which department?

(a) Department of Telecommunications (DoT)

(b) Department of Defence Research

(c) Department of Space

(d) Department of Science and Technology

Answer and explanation
Answer: (a) Department of Telecommunications. C-DOT is the premier R&D institution of the Department of Telecommunications.

Question 3. Which of these is among the focus areas of the new CoE?

(a) 5G Advanced/6G and quantum communication

(b) Satellite launch systems

(c) Bio-pharmaceutical research

(d) Submarine cable manufacturing

Answer and explanation
Answer: (a). The centre will work on 5G Advanced/6G, ultra-massive MIMO, ISAC, AI-native networks, quantum/post-quantum communication, and cyber security.

Sources and Limitations

- PIB (Ministry of Communications), 23 October 2026 (read; MoU, focus areas, CoE list): https://pib.gov.in/PressReleasePage.aspx?PRID=2327317