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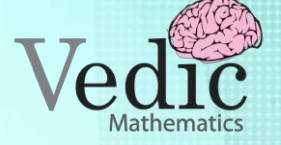
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### DRDO & Research

**Ministerial Visit and Commendation:** Minister of State for Defence, Sanjay Seth, visited the Dr. APJ Abdul Kalam Missile Complex at DRDO in Hyderabad on July 16-17, 2025. He highly praised DRDO scientists for their vital role in achieving "Aatmanirbhar Bharat" (self-reliant India) by developing state-of-the-art weapon systems. He urged the scientific community to continue strengthening the armed forces.

**Review of Missile & Weapon Systems:** During his visit, MoS Seth reviewed various missile and weapon systems programs being pursued by DRDL, RCI, and ASL (Missile Cluster Labs). This included work centers for Astra Mk-I and Mk-II missiles, vertically-launched short-range surface-to-air missiles, and scramjet engine facilities. He also reviewed progress on indigenous navigation/aviation systems, onboard computer divisions, and imaging infra-red seeker facilities at RCI.

**Successful Missile Test-Firings:** On July 18, 2025, India successfully test-fired two strategic assets: the short-range ballistic missile Prithvi-II and the ballistic missile Agni-I, from the Integrated Test Range in Chandipur, Odisha. These were conducted under the Strategic Forces Command as routine training and validation exercises, with both missiles meeting all operational objectives.

**AWACS Project (Netra MkII):** The government has approved a significant Rs 20,000 crore AWACS (Airborne Warning and Control System) project, known as Netra MkII. This initiative, spearheaded by DRDO in collaboration with Indian companies and Airbus, aims to develop next-generation indigenous airborne early warning and control systems, enhancing the Indian Air Force's surveillance capabilities. These systems will be installed on Airbus A321 aircraft.

**Quantum Secure Communication:** The DRDO and IIT-Delhi have successfully demonstrated free-space quantum secure communication over more than 1 km using quantum entanglement. This significant achievement, accomplished through the DRDO-Industry-Academia Centre of Excellence (DIA-CoE) at IIT-Delhi, paves the way for real-time applications in quantum cybersecurity, quantum networks, and the future quantum internet.

**Quantum Technology Research Centre:** DRDO inaugurated a Quantum Technology Research Centre to further bolster indigenous quantum capabilities for strategic and defence applications.

**Advanced Materials and Soldier Systems:** Recent DRDO innovations include:

- Development of a cost-effective, "Make-in-India" advanced Carbon Fibre Foot Prosthesis (in collaboration with AIIMS Bibinagar).
- Development of high-pressure polymeric membrane for sea water desalination.
- Development of lighter and highly protective bulletproof jackets (ABHED) by DRDO Industry Academia Centre of Excellence at IIT Delhi, offering protection against various threats including sniper rounds.
- Development of triple-layer modular extreme weather waterproof clothing for the Indian Armed Forces, providing protection in extreme cold conditions.

**Underwater Domain Awareness:** DRDO has achieved a significant milestone in bolstering Underwater Domain Awareness (UDA) by successfully deploying and evaluating a battery-operated, platform-independent sonar system at a deep-sea location. This is part of creating a network of Autonomous Acoustic Sensor Nodes for surveillance.

**Aerospace Innovation:** DRDO showcased indigenous aerospace innovations at Aero India 2025 (February 17-19, 2025).





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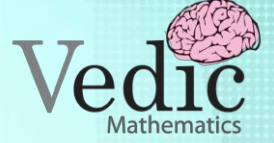
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2025) and the Paris Air Show 2025 (June 2025), including the full-scale model of India's first 5.5 Generation stealth aircraft, the Advanced Medium Combat Aircraft (AMCA), Twin Engine Deck Based Fighter (TEDBF), LCA Mk-2 Model, and various advanced missiles and avionics.

**Focus on Public-Private Partnerships:** Defence Minister Rajnath Singh, during DRDO's 67th Foundation Day in January 2025, emphasized public-private partnerships as crucial for the growth of the defence sector. He urged DRDO to widen its collaboration with industries and startups and to actively engage with them through "open days" at their labs.

**Internship Program:** DRDO recently closed applications (July 14, 2025) for its paid internship program for final-year Science and Engineering students at the Defence Research and Development Laboratory (DRDL), Hyderabad, a key facility for missile systems research.

### MCQs

**1. Which Minister of State for Defence visited the Dr. APJ Abdul Kalam Missile Complex at DRDO in Hyderabad on July 16-17, 2025?**

- A) Rajnath Singh
- B) Sanjay Seth
- C) Ajay Bhatt
- D) G. Satheesh Reddy

**Answer: B) Sanjay Seth**

**Explanation:** The text states: "Minister of State for Defence, Sanjay Seth, visited the Dr. APJ Abdul Kalam Missile Complex at DRDO in Hyderabad on July 16-17, 2025."

**2. What was the primary focus of Minister of State Sanjay Seth's commendation for DRDO scientists during his recent visit?**

- A) Their role in developing space technology
- B) Their vital role in achieving "Aatmanirbhar Bharat" (self-reliant India) by developing state-of-the-art weapon systems
- C) Their efforts in humanitarian aid and disaster relief
- D) Their contributions to civilian infrastructure projects

**Answer: B) Their vital role in achieving "Aatmanirbhar Bharat" (self-reliant India) by developing state-of-the-art weapon systems**

**Explanation:** The text highlights: "He highly praised DRDO scientists for their vital role in achieving "Aatmanirbhar Bharat" (self-reliant India) by developing state-of-the-art weapon systems."

**3. Which two strategic assets were successfully test-fired by India on July 18, 2025, from the Integrated Test Range in Chandipur, Odisha?**

- A) Akash and Nag missiles
- B) BrahMos and K-4 missiles
- C) Prithvi-II and Agni-I ballistic missiles
- D) Tejas and Dhruv aircraft

**Answer: C) Prithvi-II and Agni-I ballistic missiles**

**Explanation:** The text explicitly mentions: "On July 18, 2025, India successfully test-fired two strategic assets: the short-range ballistic missile Prithvi-II and the ballistic missile Agni-I..."

**4. What is the estimated cost of the approved AWACS (Airborne Warning and Control System) project, known as Netra MkII?**

- A) Rs 15,000 crore
- B) Rs 20,000 crore
- C) Rs 25,000 crore
- D) Rs 30,000 crore







**Answer: B) Rs 20,000 crore**

**Explanation:** The text states: "The government has approved a significant Rs 20,000 crore AWACS (Airborne Warning and Control System) project, known as Netra MkII."

**5. Which aircraft model will be used to install the next-generation indigenous airborne early warning and control systems developed under the Netra MkII project?**

- A) Boeing 747
- B) Airbus A321
- C) Sukhoi Su-30 MKI
- D) C-17 Globemaster III

**Answer: B) Airbus A321**

**Explanation:** The text specifies: "These systems will be installed on Airbus A321 aircraft."

**6. The DRDO successfully demonstrated free-space quantum secure communication over more than 1 km in collaboration with which academic institution?**

- A) IIT Bombay
- B) IIT Madras
- C) IIT Delhi
- D) IIT Kanpur

**Answer: C) IIT Delhi**

**Explanation:** The text clearly states: "The DRDO and IIT-Delhi have successfully demonstrated free-space quantum secure communication over more than 1 km using quantum entanglement."

**7. What is the name of the new bulletproof jacket developed by the DRDO Industry Academia Centre of Excellence at IIT Delhi, offering protection against various threats including sniper rounds?**

- A) Rakshak
- B) Kavach

- C) ABHED
- D) Vajra

**Answer: C) ABHED**

**Explanation:** The text mentions: "Development of lighter and highly protective bulletproof jackets (ABHED) by DRDO Industry Academia Centre of Excellence at IIT Delhi, offering protection against various threats including sniper rounds."

**8. What new technology has DRDO achieved a significant milestone in for bolstering Underwater Domain Awareness (UDA)?**

- A) Satellite imagery analysis
- B) Laser-guided torpedoes
- C) A battery-operated, platform-independent sonar system
- D) Robotic underwater vehicles

**Answer: C) A battery-operated, platform-independent sonar system**

**Explanation:** The text states: "DRDO has achieved a significant milestone in bolstering Underwater Domain Awareness (UDA) by successfully deploying and evaluating a battery-operated, platform-independent sonar system at a deep-sea location."

**9. Which of the following indigenous aerospace innovations was showcased by DRDO at Aero India 2025 and the Paris Air Show 2025?**

- A) Rafale fighter jet
- B) F-35 stealth fighter
- C) Advanced Medium Combat Aircraft (AMCA) full-scale model
- D) Apache attack helicopter

**Answer: C) Advanced Medium Combat Aircraft (AMCA) full-scale model**





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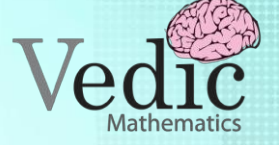
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**Explanation:** The text lists: "...including the full-scale model of India's first 5.5 Generation stealth aircraft, the Advanced Medium Combat Aircraft (AMCA)..."

**10. When did Defence Minister Rajnath Singh emphasize the crucial role of public-private partnerships for the growth of the defence sector during DRDO's Foundation Day?**

- A) July 2025
- B) February 2025
- C) January 2025
- D) June 2025

**Answer: C) January 2025**

**Explanation:** The text states: "Defence Minister Rajnath Singh, during DRDO's 67th Foundation Day in January 2025, emphasized public-private partnerships..."

**11. The DRDO recently closed applications for its paid internship program for final-year Science and Engineering students at which specific facility?**

- A) Aeronautical Development Agency (ADA)
- B) Defence Research and Development Laboratory (DRDL), Hyderabad
- C) Naval Science & Technological Laboratory (NSTL), Visakhapatnam
- D) Research Centre Imarat (RCI), Hyderabad

**Answer: B) Defence Research and Development Laboratory (DRDL), Hyderabad**

**Explanation:** The text mentions: "...closed applications (July 14, 2025) for its paid internship program for final-year Science and Engineering students at the Defence Research and Development Laboratory (DRDL), Hyderabad..."

**12. The successful demonstration of free-space quantum secure communication by DRDO and IIT-Delhi is expected to pave the way for real-time applications in all of the following EXCEPT:**

- A) Quantum cybersecurity
- B) Quantum networks
- C) Future quantum internet
- D) Conventional satellite communication

**Answer: D) Conventional satellite communication**

**Explanation:** The text states it "paves the way for real-time applications in quantum cybersecurity, quantum networks, and the future quantum internet." Conventional satellite communication is a distinct technology.

**13. Which Indian institution collaborated with DRDO for the development of a cost-effective, "Make-in-India" advanced Carbon Fibre Foot Prosthesis?**

- A) AIIMS Delhi
- B) AIIMS Bibinagar
- C) PGI Chandigarh
- D) CMC Vellore

**Answer: B) AIIMS Bibinagar**

**Explanation:** The text states: "Development of a cost-effective, "Make-in-India" advanced Carbon Fibre Foot Prosthesis (in collaboration with AIIMS Bibinagar)."

**14. The triple-layer modular extreme weather waterproof clothing developed by DRDO is intended for use by which specific group?**

- A) Civilians in cold regions
- B) Mountain climbers
- C) Indian Armed Forces
- D) Disaster relief workers

**Answer: C) Indian Armed Forces**





**Explanation:** The text specifies: "Development of triple-layer modular extreme weather waterproof clothing for the Indian Armed Forces, providing protection in extreme cold conditions."

**15. Which of the following was NOT among the specific facilities or programs reviewed by MoS Seth at the Dr. APJ Abdul Kalam Missile Complex?**

- A) Astra Mk-I and Mk-II missiles
- B) Vertically-launched short-range surface-to-air missiles
- C) Submarine construction facilities
- D) Scramjet engine facilities

**Answer: C) Submarine construction facilities**

**Explanation:** The review focused on missile and weapon systems programs, including "work centers for Astra Mk-I and Mk-II missiles, vertically-launched short-range surface-to-air missiles, and scramjet engine facilities." Submarine construction facilities are not mentioned in this context.

