DRDO & Research & Development:

A significant development in India's defense R&D on this date is the imminent approval of a joint project between the Defence Research and Development Organisation (DRDO) and French aerospace company Safran S.A. to co-develop a 120-kilonewton (kN) fighter jet engine. This engine is intended to power India's indigenous Advanced Medium Combat Aircraft (AMCA), a fifth-generation fighter jet.

Key Details of the Joint Project

Purpose: To indigenously design, develop, and produce a high-thrust fighter jet engine, reducing India's dependence on foreign suppliers.

Technology Transfer: Safran has committed to a 100% transfer of technology to DRDO, including the crucial single-crystal blade technology, which is vital for engine durability and performance.

Timeline & Prototypes: The joint venture will develop nine prototypes over a period of 12 years. The initial engine will produce 120 kN of thrust, with plans to scale it up to 140 kN.

Other Applications: Besides the AMCA, this new engine is also intended for the Indian Navy's Twin Engine Deck Based Fighter (TEDBF), a carrier-based aircraft.

Other Recent R&D Highlights

Missile Testing: DRDO successfully conducted two consecutive flight tests of the Pralay missile, a solid-propellant quasi-ballistic missile, as part of user evaluation trials.

UAV-Launched Missile: The organization also successfully carried out flight trials of the Unmanned Aerial Vehicle Launched Precision Guided Missile (ULPGM)-V3 at a test range in Andhra Pradesh, which is an enhanced version of an earlier model.

Through Wall Imaging Radar (TWIR): DRDO demonstrated its indigenously developed TWIR to security forces, including the National Disaster Response Force (NDRF) and Delhi Police. This radar can image behind walls in real-time, helping in hostage scenarios and other security operations.

Technology Transfer: DRDO has transferred key defense material technologies to private companies under its 2025 Transfer of Technology (ToT) policy, encouraging private sector growth in defense manufacturing. These technologies include radome manufacturing, high-strength steel for armour plating, and naval-grade steel for shipbuilding.

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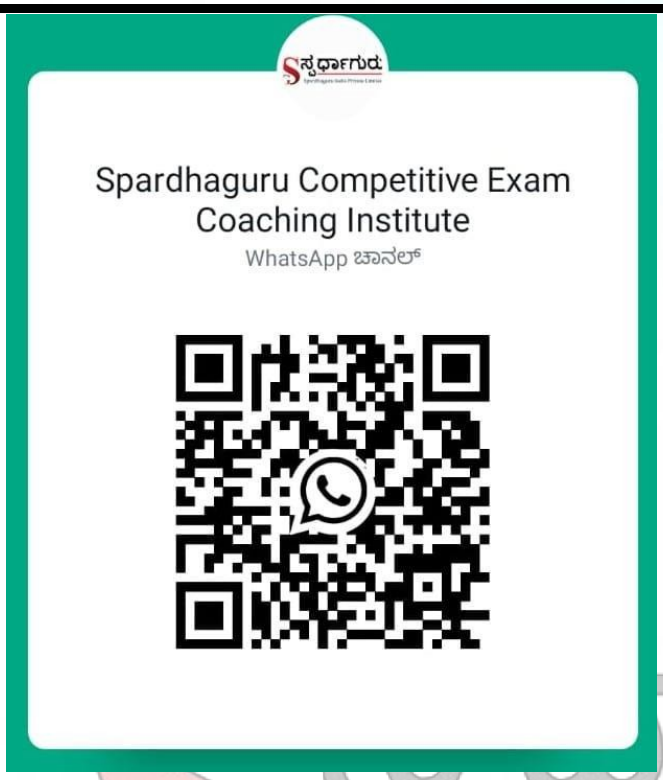

MCQS

1.Which French company is collaborating with DRDO to co-develop a 120-kilonewton (kN) fighter jet engine?
A) Airbus
B) Thales
C) Safran S.A.
D) Dassault Aviation

Answer: C
The text explicitly mentions the joint project is between DRDO and the French aerospace company Safran S.A.

2.What is the new fighter jet engine, co-developed by DRDO and Safran S.A., primarily intended to power?
A) The LCA Tejas
B) The Indian Navy's MiG-29K fleet
C) The Advanced Medium Combat Aircraft (AMCA)
D) The Rafale fighter jets

Answer: C
The text states, "This engine is intended to power India's indigenous Advanced Medium Combat Aircraft (AMCA), a fifth-generation fighter jet." It also mentions a secondary application for the TEDBF.

3.What crucial technology has Safran S.A. committed to transferring 100% to DRDO as part of the joint project?
A) Stealth coating technology
B) Single-crystal blade technology
C) Avionics and radar systems
D) Airframe design and manufacturing

Answer: B
The text highlights that "Safran has committed to a 100% transfer of technology to DRDO, including the crucial single-crystal blade technology."

4.What is the name of the indigenously developed radar that can image behind walls in real-time and was demonstrated to security forces?
A) The Pralay missile
B) The ULPGM-V3 missile
C) The Twin Engine Deck Based Fighter (TEDBF)
D) The Through Wall Imaging Radar (TWIR)

Answer: D
The text states, "DRDO demonstrated its indigenously developed Through Wall Imaging Radar (TWIR) to security forces... This radar can image behind walls in real-time."

5.Which of the following defense material technologies has DRDO transferred to private companies under its 2025 Transfer of Technology (ToT) policy?

A) Satellite launch vehicle technology
B) Radome manufacturing
C) Nuclear submarine propulsion
D) Hypersonic missile components

Answer: B
The text mentions that DRDO has transferred technologies that "include radome manufacturing, high-strength steel for armour plating, and naval-grade steel for shipbuilding."

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