MISSION X · XTECH

PRELIMS 2027 COMPLETION

XTECH

READ → RECALL → ELIMINATE → MASTER

X-FACT · X-TRAP · X-LINK · X-ELIMINATE

25 – 31 August 2026

IN THIS EDITION

🛰 SPACE TECHNOLOGY

01 CosmoCube — Listening to the Universe's 'Dark Ages' — ⭐ SHOULD KNOW

🛡 DEFENCE TECHNOLOGY

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🧬 BIOTECHNOLOGY & HEALTH

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01 GS PAPER III · SPACE TECHNOLOGY · ASTRONOMY

☆ SHOULD KNOW

CosmoCube — Listening to the Universe's 'Dark Ages'

📰 WHY IN NEWS

A UK-led team (Nature Astronomy, August 2026) proposed CosmoCube — a suitcase-sized lunar satellite to detect the faintest radio echo of the early universe.

🧠 5 CORE FACTS · REMEMBER

Led by	University of Cambridge, UK
Signal targeted	21cm hydrogen line
Shield used	Moon's far side (radio-quiet)
Mission length	~2 years, ~1,000 hours of data
Launch window	Proposed, within next 5 years

⚠ UPSC TRAP

✕ **Already launched and returning data**
✓ **Still a funded proposal, not yet launched**

🔗 STATIC LINK

CosmoCube → 21cm hydrogen signal → Cosmic Dark Ages/Dawn → Radio astronomy from the Moon

💡 ELIMINATION CLUE

Statement calls CosmoCube "already operational" → ELIMINATE. It targets launch within 5 years, not yet flown.

💡 PRELIMS CHECK

Consider the following statements:
1. It aims to detect the 21cm radio signal emitted by hydrogen atoms.
2. It will use the Moon's far side to shield against terrestrial radio interference.
3. The mission has already been launched and is operational.

Which of the statements given above is/are correct?

(a) 1 and 2 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

⚡ Statement 3 is wrong — CosmoCube remains a proposed mission, not yet launched. | Answer: (a) 1 and 2 only

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02 GS PAPER III · DEFENCE TECHNOLOGY · COAST GUARD

☆ SHOULD KNOW

ICGS Ajit Joins the Indian Coast Guard

📰 WHY IN NEWS

Goa Shipyard Limited handed over ICGS Ajit, a new indigenous Fast Patrol Vessel, to the Indian Coast Guard on 25 August 2026.

🧠 5 CORE FACTS · REMEMBER

Class	Adamya-class (7th ship)
Builder	Goa Shipyard Limited
Indigenous content	65%+
Speed	27+ knots
Role	EEZ surveillance, anti-smuggling, SAR

⚠ UPSC TRAP

✕ Indian Navy vessel / Offshore Patrol Vessel
✓ Indian Coast Guard vessel / Fast Patrol Vessel

🔗 STATIC LINK

ICGS Ajit → Adamya-class FPV → Coast Guard fleet → Maritime security (EEZ)

💡 ELIMINATION CLUE

Statement calls ICGS Ajit an "Offshore Patrol Vessel" or a Navy ship → ELIMINATE. It's a Coast Guard Fast Patrol Vessel.

💡 PRELIMS CHECK

Consider the following statements:
1. It is a Fast Patrol Vessel of the Adamya-class.
2. It was built by Goa Shipyard Limited.
3. It belongs to the Indian Navy.

How many of the statements given above are correct?

(a) Only one
(b) Only two
(c) All three
(d) None

⚡ Statement 3 is wrong — ICGS Ajit belongs to the Coast Guard, not the Navy. | Answer: (b) Only two

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03 GS PAPER III · DEFENCE TECHNOLOGY · HIGH-ALTITUDE WARFARE

🔥 MUST REVISE

DRDO Tests Combat Parachute System at 22,000 Feet

📰 WHY IN NEWS

DRDO successfully tested its indigenous Military Combat Parachute System (MCPS) at the Nyoma-Mudh Drop Zone, Ladakh, on 26 August 2026.

🧠 5 CORE FACTS · REMEMBER

Developer	ADRDE, Agra + DEBEL, Bengaluru
Test altitude	22,000 feet
Deployment altitude	20,000 feet
Landing altitude	13,700 feet
Earlier record	32,000 ft freefall (Oct 2025)

⚠ UPSC TRAP

✕ First-ever high-altitude test
✓ Follow-up to Oct 2025's 32,000 ft test

🔗 STATIC LINK

MCPS → ADRDE/DEBEL (DRDO labs) → High-altitude warfare → Aatmanirbhar Bharat in defence

💡 ELIMINATION CLUE

Statement calls this MCPS's "first" high-altitude trial → ELIMINATE. A higher (32,000 ft) test was already done in Oct 2025.

💡 PRELIMS CHECK

Consider the following statements:
1. It was developed by DRDO's ADRDE, Agra.
2. Its August 2026 trial was its first-ever high-altitude test.
3. It is currently the only Indian parachute system certified above 25,000 feet.

Which of the statements given above is/are correct?

(a) 1 and 3 only

(b) 1 and 2 only

(c) 2 and 3 only

(d) 1, 2 and 3

⚡ Statement 2 is wrong — MCPS was already tested at 32,000 ft in October 2025. | Answer: (a) 1 and 3 only

04 GS PAPER III · DEFENCE TECHNOLOGY · ANTI-TANK MISSILES

🔥 MUST REVISE

India Signs Deal for US Javelin Anti-Tank Missiles

📻 WHY IN NEWS

India signed a Letter of Offer and Acceptance to procure FGM-148 Javelin anti-tank guided missiles from the US, with Tata Advanced Systems exploring co-production.

🧠 5 CORE FACTS · REMEMBER

Full name	FGM-148 Javelin
Type	Man-portable, shoulder-fired ATGM
Mode	'Fire-and-forget' (no post-launch guidance)
Route	US Foreign Military Sales (FMS)
India partner	Tata Advanced Systems (co-production)

⚠ UPSC TRAP

✕ Requires continuous guidance after launch
✓ Fire-and-forget, no guidance needed post-launch

🔗 STATIC LINK

Javelin → Anti-tank guided missile (ATGM) → Foreign Military Sales → India-US defence ties

💡 ELIMINATION CLUE

Statement says Javelin needs operator guidance after firing → ELIMINATE. Its core feature is fire-and-forget.

💡 PRELIMS CHECK

Consider the following statements:
1. It is a fire-and-forget anti-tank guided missile.
2. It requires continuous operator guidance until impact.
3. India is exploring co-production of the Javelin with Tata Advanced Systems.

Which of the statements given above is/are correct?

(a) 1 and 3 only

(b) 1 and 2 only

(c) 2 and 3 only

(d) 1, 2 and 3

⚡ Statement 2 contradicts Javelin's defining 'fire-and-forget' feature. | Answer: (a) 1 and 3 only

05 GS PAPER III · BIOTECHNOLOGY · NEUROSCIENCE

☆ SHOULD KNOW

Blood-Based Tools Advance Alzheimer's Detection

📻 WHY IN NEWS

2026 research, including findings at AAIC 2026, has expanded blood-test tools like p-tau217 to flag Alzheimer's risk years before symptoms appear.

5 CORE FACTS · REMEMBER

Key biomarker	p-tau217 protein
Detects	Risk years before symptoms
Traditional diagnosis	PET scan / spinal tap
New approach	Blood-based biomarker test
FDA-approved test (2025)	Lumipulse

⚠ UPSC TRAP

✕ Blood tests fully replace brain imaging
✓ Blood tests complement, not replace, imaging

🔗 STATIC LINK

Alzheimer's → Amyloid/Tau proteins → Biomarkers → Neurodegenerative disease diagnostics

ELIMINATION CLUE

Statement claims blood tests "completely replace" PET scans → ELIMINATE. They complement existing diagnostic tools.

PRELIMS CHECK

Consider the following statements:
1. p-tau217 is a blood biomarker linked to Alzheimer's risk.
2. Blood-based tests have completely replaced PET scans for diagnosis.

Which of the statements given above is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

⚡ Statement 2 is wrong — blood tests complement, not replace, brain imaging and spinal fluid tests. | Answer: (a) 1 only

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06 GS PAPER III · BIOTECHNOLOGY · PUBLIC HEALTH

EXTRA EDGE

Salmonella Outbreaks Spotlight Foodborne AMR

WHY IN NEWS

Multistate Salmonella outbreaks in the US (August 2026), linked to jalapeños and sprouts, renewed attention on foodborne illness surveillance and antibiotic-resistant strains.

5 CORE FACTS · REMEMBER

Causative agent	Salmonella (a bacterium)
Transmission	Contaminated food/water
Detection tool	PulseNet (DNA fingerprinting)
2026 concern	Multi-drug-resistant strains found
Symptoms	Diarrhoea, fever, cramps

⚠ UPSC TRAP

✕ Salmonella is a virus
✓ Salmonella is a bacterium

🔗 STATIC LINK

Salmonella → Foodborne bacterial illness → Antimicrobial resistance → Public health surveillance

ELIMINATION CLUE

Statement calls Salmonella a "virus" → ELIMINATE instantly. It is a bacterium.

PRELIMS CHECK

Consider the following statements:
1. Salmonella is a bacterial pathogen.
2. Most Salmonella infections require antibiotic treatment to resolve.

Which of the statements given above is/are correct?

- **(a)** 1 only
- **(b)** 2 only
- **(c)** Both 1 and 2
- **(d)** Neither 1 nor 2

⚡ Statement 2 is wrong — most people recover from Salmonella without antibiotics. | Answer: (a) 1 only

07 GS PAPER III · BIOTECHNOLOGY · PUBLIC HEALTH

MUST REVISE

AdFalciVax — India's Indigenous Malaria Vaccine

WHY IN NEWS

> ICMR's chief confirmed India's homegrown multi-stage malaria vaccine, AdFalciVax, is still a couple of years from rollout, with a government target of launch before 2030.

5 CORE FACTS · REMEMBER

Developer	ICMR-RMRC, Bhubaneswar
Target parasite	Plasmodium falciparum
Type	Recombinant, multi-stage vaccine
Licensed to	5 companies (non-exclusive)
Target rollout	Before 2030

UPSC TRAP

✕ Already approved and commercially available
✓ Still under evaluation, not yet available

STATIC LINK

AdFalciVax → Plasmodium falciparum → Multi-stage vaccine design → India's malaria elimination goal

ELIMINATION CLUE

Statement says AdFalciVax is "commercially available" → ELIMINATE. It's still years from rollout.

PRELIMS CHECK

Consider the following statements:
1. It targets Plasmodium falciparum at multiple stages of its life cycle.
2. It has been developed by ICMR's Regional Medical Research Centre, Bhubaneswar.
3. It is already commercially available for public use in India.

Which of the statements given above is/are correct?

- **(a)** 1 and 2 only
- **(b)** 1 and 3 only
- **(c)** 2 and 3 only
- **(d)** 1, 2 and 3

⚡ Statement 3 is wrong — AdFalciVax is still under development, not commercially available. | Answer: (a) 1 and 2 only

60-Second Rapid Revision

ALL 7 TOPICS · 25 – 31 AUGUST 2026

#	TOPIC	3 FACTS	TRAP
01	CosmoCube	University of Cambridge, UK · 21cm hydrogen line · Moon's far side (radio-quiet)	≠ Already launched and returning data
02	ICGS Ajit Joins the Indian Coast Guard	Adamya-class (7th ship) · Goa Shipyard Limited · 65%+	≠ Indian Navy vessel / Offshore Patrol Vessel
03	DRDO Tests Combat Parachute System at 22,000 Feet	ADRDE, Agra + DEBEL, Bengaluru · 22,000 feet · 20,000 feet	≠ First-ever high-altitude test
04	India Signs Deal for US Javelin Anti-Tank Missiles	FGM-148 Javelin · Man-portable, shoulder-fired ATGM · 'Fire-and-forget' (no post-launch guidance)	≠ Requires continuous guidance after launch
05	Blood-Based Tools Advance Alzheimer's Detection	p-tau217 protein · Risk years before symptoms · PET scan / spinal tap	≠ Blood tests fully replace brain imaging
06	Salmonella Outbreaks Spotlight Foodborne AMR	Salmonella (a bacterium) · Contaminated food/water · PulseNet (DNA fingerprinting)	≠ Salmonella is a virus
07	AdFalciVax	ICMR-RMRC, Bhubaneswar · Plasmodium falciparum · Recombinant, multi-stage vaccine	≠ Already approved and commercially available

THIS WEEK'S PRELIMS COMPLETION

- ✓ Space Technology
- ✓ Defence Technology
- ✓ Biotechnology & Health

X-FACT → X-TRAP → X-LINK → X-ELIMINATE