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DAILY QUIZ — SOLVED

Daily Quiz, August 24, 2026

24 August 2026



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DAILY QUIZ — SOLVED ANSWER KEY

Daily Quiz, August 24, 2026

24 August 2026 · 5 Questions · Answers & Explanations Included

Question 1

of 5

 [Source](#) →

China's Chang'e-7 lunar mission, launched August 24, 2026, targets a landing near which named lunar feature?

- ☐ A Tycho crater
- ☒ B Shackleton crater ✓
- ☐ C Copernicus crater
- ☐ D Mare Imbrium

ANSWER & ANALYSIS

✓ EXPLANATION

FACT: China launched its Chang'e-7 lunar mission from the Wenchang Spacecraft Launch Site, Hainan, aboard a Long March 5 (Y14) rocket on August 24, 2026, targeting a landing near Shackleton crater at the Moon's south pole, the same broad region where India's Chandrayaan-3 achieved the first soft landing near the lunar south pole on August 23, 2023. **ANALYSIS:** The mission intensifies international competition around the lunar south pole, since permanently shadowed craters in this region are suspected to harbour water-ice deposits with major implications for future in-situ resource utilisation and crewed lunar missions.

CONCEPT NOTE

Shackleton crater, named after the Antarctic explorer Ernest Shackleton, is located almost exactly at the Moon's south pole and has portions that remain in permanent shadow, creating conditions cold enough to trap water ice for potentially billions of years. This makes it one of the most scientifically and strategically significant lunar landing targets among spacefaring nations currently planning south-pole missions, including the United States' Artemis programme and China's own crewed lunar ambitions.

China's selection of a landing zone near this crater reflects the same underlying scientific rationale, water-ice prospecting, that drove Chandrayaan-3's south-polar targeting. Beyond water-ice prospecting, the crater's rim also offers unusually long periods of near-continuous sunlight compared to the surrounding terrain, making it attractive for solar-powered surface operations, a combination of permanently shadowed interior and near-continuously sunlit rim that is relatively rare on the Moon and explains why multiple national space programmes have converged on this same specific target.

Q1
 **CONCEPT KIT**
 CROSS-PAPER

GS3 (space technology, comparative lunar exploration); GS1 (physical geography of the Moon).

 MAINS KEYWORDS

Shackleton crater, lunar south pole, water-ice deposits.

 COMMON MISTAKE

confusing Shackleton crater (near the lunar south pole, a current mission target) with craters like Tycho or Copernicus, which are prominent but not south-polar and not the focus of current water-ice exploration missions.

 EXAM TIP

anchor "Shackleton crater, lunar south pole, water-ice target" as this mission's fixed fact set.

 INTERVIEW

how urgent is the need for India's follow-on lunar missions to maintain first-mover credibility in south-pole resource mapping?

 [Read Full Article →](#)

Question 2

of 5

[Source →](#)

Chang'e-7, launched on August 24, 2026, comprises an orbiter, lander, rover, and which additional mission component not present in China's earlier lunar missions?

- ☐ A A crewed capsule
- ☐ B A sample-return canister
- ☐ C A relay satellite constellation
- ☒ D A hopper ✓

ANSWER & ANALYSIS
✓ EXPLANATION

FACT: Chang'e-7 comprises an orbiter, lander, rover, and a hopper, making it China's most ambitious lunar mission to date and an explicit precursor to its planned crewed lunar landing, targeted for 2030, launched from Wenchang, Hainan, aboard a Long March 5 (Y14) rocket. **ANALYSIS:** The addition of a hopper, a component capable of making short, powered jumps across the lunar surface, allows the mission to investigate multiple, more difficult-to-reach sites, such as the interiors of permanently shadowed craters that a stationary lander or wheeled rover cannot easily access.

📌 CONCEPT NOTE

A lunar hopper differs from a rover in that it uses powered, ballistic jumps rather than continuous surface traversal, making it particularly suited to investigating terrain that is too steep, rocky, or shadowed for wheeled locomotion, precisely the conditions found inside permanently shadowed polar craters like Shackleton. Chang'e-7's four-component architecture, orbiter, lander, rover and hopper, represents a significant scaling-up in mission complexity compared to earlier Chang'e missions, reflecting the specific scientific and engineering challenges of thoroughly investigating the lunar south pole's water-ice potential ahead of a crewed landing.

The orbiter conducts high-resolution mapping and relay communications support, the lander deploys the surface payloads and provides a stable science platform, the rover conducts extended surface traverses to sample varied terrain, and the hopper specifically targets otherwise inaccessible permanently shadowed crater interiors, together forming a genuinely comprehensive reconnaissance package rather than a single-instrument mission.

Q2
 **CONCEPT KIT**

CROSS-PAPER

GS3 (space technology, mission architecture innovation).


MAINS KEYWORDS

lunar hopper, Chang'e-7 mission architecture, water-ice prospecting.


COMMON MISTAKE

assuming Chang'e-7's hopper is a crewed component; it is an uncrewed, remotely operated mobility platform, distinct from any human-spaceflight element.


EXAM TIP

anchor "orbiter + lander + rover + hopper, China's most ambitious lunar mission" as this mission's fixed fact set.


INTERVIEW

what specific engineering advantages does a hopper offer over a wheeled rover for exploring permanently shadowed polar terrain?


[Read Full Article →](#)

Question 3

of 5

[Source](#)

Chang'e-7's international payloads, launched August 24, 2026, include a laser retroreflector contributed by which country?

- A** Italy ✓
- B** Russia
- C** Switzerland
- D** Thailand

ANSWER & ANALYSIS
✓ EXPLANATION

FACT: Chang'e-7 carries international payloads reflecting multilateral instrument-sharing, including a Russian dust-detection instrument, an Italian laser retroreflector, a Bahrain/Egypt-developed camera called LunaHcam, a Thai-Chinese high-energy particle instrument, and a Swiss dual-channel Earth radiation spectrometer. **ANALYSIS:** This multilateral payload-sharing arrangement illustrates a form of space diplomacy distinct from formal mission partnerships, allowing smaller space programmes to contribute specific scientific instruments to a larger mission led by a major space power.

📌 CONCEPT NOTE

A laser retroreflector is a passive instrument, it does not generate its own signal but instead precisely reflects laser light beamed at it from Earth or orbiting spacecraft, enabling extremely accurate distance measurements useful for lunar geodesy and testing fundamental physics theories. Italy has a established history of contributing laser retroreflector technology to international space missions, building on experience from similar instruments flown on other lunar and planetary missions.

This kind of instrument-level international contribution, rather than full mission partnership, is a common model in contemporary space exploration, allowing India's own missions to potentially pursue similar collaborative arrangements with international partners for specific scientific payloads.

Q3
 **CONCEPT KIT**
 CROSS-PAPER

GS2 (international space cooperation, space diplomacy); GS3 (space technology, scientific instrumentation).

 MAINS KEYWORDS

laser retroreflector, multilateral payload-sharing, lunar geodesy.

 COMMON MISTAKE

assuming international payload contributions imply a formal joint mission; these are typically individual instrument contributions to a mission led and operated by a single country, in this case China.

 EXAM TIP

anchor "Italy: laser retroreflector, Russia: dust detector, Switzerland: radiation spectrometer" as this mission's international-payload fixed fact set.

 INTERVIEW

should India pursue similar instrument-level international collaboration on its own upcoming lunar missions?

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Question 4

of 5

[Source →](#)

Chang'e-7, launched August 24, 2026, is explicitly framed as a precursor mission ahead of China's planned crewed lunar landing, targeted for which year?

A 2028

B 2030 ✓

C 2035

D 2040

ANSWER & ANALYSIS
✓ EXPLANATION

FACT: Chang'e-7 is an explicit precursor to China's planned crewed lunar landing, targeted for 2030, with the mission's orbiter, lander, rover and hopper components designed to thoroughly investigate the lunar south pole's water-ice potential ahead of that crewed attempt. **ANALYSIS:** Sequencing an extensive robotic precursor mission before a crewed landing reflects a risk-reduction strategy, using uncrewed reconnaissance to identify safe landing zones and confirm resource availability before committing to the far higher stakes of human spaceflight.

📌 CONCEPT NOTE

China's 2030 crewed lunar landing target places it in direct, publicly acknowledged competition with the United States' Artemis programme, which has pursued a similar though independently designed crewed lunar return timeline. Both programmes share a common strategic logic: robotic precursor missions to the lunar south pole, prioritised specifically because of the region's suspected water-ice deposits, are treated as essential reconnaissance before committing to crewed missions, since confirmed water-ice resources would substantially reduce the logistical burden of sustaining a long-term human presence on the Moon.

For India, this global timeline compression adds urgency to its own lunar programme, including the India-Japan joint Lunar Polar Exploration Mission (LUPEX), if India wishes to establish an early scientific and strategic foothold in lunar south-pole resource mapping before larger space powers complete their own crewed missions.

Q4
 **CONCEPT KIT**
 CROSS-PAPER

GS3 (space technology, comparative national space programmes); GS2 (international space competition).

 MAINS KEYWORDS

China 2030 crewed lunar target, Artemis programme, precursor-mission strategy.

 COMMON MISTAKE

confusing China's 2030 crewed lunar target with its earlier crewed low-Earth-orbit space station achievements, which are a separate, already-completed programme (Tiangong).

 EXAM TIP

anchor "Chang'e-7 as precursor, China's crewed landing target: 2030" as this roadmap's fixed fact set.

 INTERVIEW

what urgency does the compressed global timeline for lunar south-pole missions add to India's own LUPEX and follow-on lunar programme?

 [Read Full Article →](#)

Question 5

of 5

[Source →](#)

Chang'e-7's international payload roster, launched August 24, 2026, includes the LunaHcam camera, jointly developed by which two countries?

A Russia and Switzerland

B Thailand and China

C Bahrain and Egypt ✓

D Italy and Germany

ANSWER & ANALYSIS
✓ EXPLANATION

FACT: Chang'e-7's international payloads include LunaHcam, a camera jointly developed by Bahrain and Egypt, alongside a Russian dust-detection instrument, an Italian laser retroreflector, a Thai-Chinese high-energy particle instrument, and a Swiss dual-channel Earth radiation spectrometer. **ANALYSIS:** The inclusion of Bahrain and Egypt, countries without established independent lunar-mission capability, as instrument contributors illustrates how multilateral payload-sharing arrangements allow emerging space programmes to gain direct flight heritage and scientific participation in deep-space missions without needing to develop full independent mission capability.

📌 CONCEPT NOTE

LunaHcam's joint Bahrain-Egypt development reflects a growing pattern of Gulf and African nations building space-sector capacity through targeted, lower-cost instrument contributions to established missions rather than attempting resource-intensive independent programmes, a pathway several other emerging space nations have also pursued. This model offers a useful comparative reference for India's own approach to international space cooperation, since India has historically balanced an independent, largely self-reliant space programme with selective international partnerships, such as the joint India-Japan LUPEX mission and various ISRO-NASA collaborations, rather than either fully independent or fully dependent mission models.

Bahrain's National Space Science Agency and Egypt's Space Agency have both been expanding their satellite and space-science programmes over the past decade, and a flight-proven instrument contribution to a major mission like Chang'e-7 provides valuable engineering heritage that strengthens the credibility of these agencies' own future independent or bilateral projects, a stepping-stone model distinct from India's largely self-reliant trajectory.

Q5
 **CONCEPT KIT**

CROSS-PAPER

GS2 (international space cooperation, emerging space nations); GS3 (space technology, capacity-building models).


MAINS KEYWORDS

LunaHcam, Bahrain-Egypt joint payload, emerging space nations.


COMMON MISTAKE

assuming all of Chang'e-7's international payload contributors are established space powers; Bahrain and Egypt represent emerging space nations building capacity through instrument-level participation rather than independent missions.


EXAM TIP

anchor "LunaHcam: Bahrain + Egypt joint development" as this payload's fixed fact set.


INTERVIEW

should India pursue a similar capacity-building model to help emerging space nations gain deep-space mission experience?


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“Arise, awake and stop not till the goal is reached.”

— Swami Vivekananda

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