Daily subject quiz – Science & Technology (13-11-2026)

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Questions

1. India's first indigenously designed and built aircraft carrier, INS Vikrant, commissioned on 2 September 2022, was built by

A. Mazagon Dock Shipbuilders Ltd, Mumbai

B. Cochin Shipyard Ltd, Kochi

C. Garden Reach Shipbuilders & Engineers, Kolkata

D. Hindustan Shipyard Ltd, Visakhapatnam

2. Consider the following statements:
1. Karl Landsteiner discovered the ABO blood group system in 1901.
2. A person with blood group O negative is regarded as a universal donor of red blood cells.
3. The red blood cells of a person with blood group AB carry neither the A nor the B antigen.
Which of the statements given above are correct?

A. 1 only

B. 1 and 2 only

C. 2 and 3 only

D. 1, 2 and 3

3. Match the vitamins (List I) with the diseases caused by their deficiency (List II):
(a) Vitamin A – 1. Scurvy
(b) Vitamin B1 (thiamine) – 2. Rickets
(c) Vitamin C – 3. Night blindness
(d) Vitamin D – 4. Beriberi
Codes: (a) (b) (c) (d)

A. 3 4 1 2

B. 4 3 2 1

C. 3 1 4 2

D. 2 4 1 3

4. Assertion (A): The clear sky appears blue during the day.
Reason (R): Air molecules scatter light of shorter wavelengths, such as blue, much more strongly than light of longer wavelengths, such as red.

A. Both A and R are true, and R is the correct explanation of A

B. Both A and R are true, but R is not the correct explanation of A

C. A is true, but R is false

D. A is false, but R is true

5. ISRO's second launch port, being built mainly for the Small Satellite Launch Vehicle (SSLV) at Kulasekarapattinam, is in which district of Tamil Nadu?

A. Tirunelveli

B. Thoothukudi

C. Kanniyakumari

D. Ramanathapuram

6. Consider the following statements:
1. The National Green Hydrogen Mission, approved by the Union Cabinet in January 2023, aims at a production capacity of at least 5 million tonnes of green hydrogen per year by 2030.
2. Green hydrogen is produced mainly by steam reforming of natural gas.
3. Hydrogen produced from natural gas without capturing the carbon dioxide released is called grey hydrogen.
Which of the statements given above are correct?

A. 1 only

B. 1 and 3 only

C. 2 and 3 only

D. 1, 2 and 3

7. Match the scientists (List I) with their contributions (List II):
(a) Jagadish Chandra Bose – 1. Thermal ionisation equation
(b) Meghnad Saha – 2. Interpretation of the genetic code
(c) Satyendra Nath Bose – 3. Crescograph
(d) Har Gobind Khorana – 4. Bose–Einstein statistics
Codes: (a) (b) (c) (d)

A. 3 4 1 2

B. 3 1 4 2

C. 4 1 3 2

D. 2 1 4 3

8. Assertion (A): Food cooks faster in a pressure cooker than in an open vessel.
Reason (R): The boiling point of water rises when the pressure on its surface increases.

A. Both A and R are true, and R is the correct explanation of A
B. Both A and R are true, but R is not the correct explanation of A
C. A is true, but R is false
D. A is false, but R is true

9. The Light Combat Aircraft (LCA) Tejas, inducted into the Indian Air Force in July 2016, was designed by

A. Hindustan Aeronautics Limited (HAL)
B. Aeronautical Development Agency (ADA)
C. Defence Research and Development Laboratory (DRDL)
D. National Aerospace Laboratories (NAL)

10. Consider the following statements about the CRISPR-Cas9 technique:
1. Emmanuelle Charpentier and Jennifer Doudna were awarded the 2020 Nobel Prize in Chemistry for developing it as a method for genome editing.
2. Cas9 is an enzyme that cuts DNA at a site chosen by a guide RNA.
3. The CRISPR system was first found as a defence mechanism of plant cells against fungi.
Which of the statements given above are correct?

A. 1 only
B. 1 and 2 only
C. 2 and 3 only
D. 1, 2 and 3

Answers with explanations

1. **B) Cochin Shipyard Ltd, Kochi** – INS Vikrant was designed by the Navy's Warship Design Bureau and built by Cochin Shipyard Ltd; it was commissioned at Kochi on 2 September 2022, making India one of the few countries able to design and build an aircraft carrier.

2. **B) 1 and 2 only** – Statement 3 is wrong: AB red cells carry both the A and the B antigens (and the plasma has neither anti-A nor anti-B antibodies), which is why AB positive persons are called universal recipients; it is O red cells that carry neither antigen. Landsteiner described the ABO groups in 1901 and received the Nobel Prize in 1930.

3. **A) 3 4 1 2** – Vitamin A deficiency causes night blindness; vitamin B1 (thiamine) deficiency causes beriberi; vitamin C deficiency causes scurvy (bleeding gums); vitamin D deficiency causes rickets in children (osteomalacia in adults).

4. **A) Both A and R are true, and R is the correct explanation of A** – Both are true and R explains A. In Rayleigh scattering by particles much smaller than the wavelength, the intensity of scattered light varies inversely with the fourth power of the wavelength, so blue light is scattered far more than red and fills the sky. The same effect makes the Sun look reddish at sunrise and sunset, when light travels a longer path through the air.

5. **B) Thoothukudi** – Kulasekarapattinam is in Thoothukudi district; the Prime Minister laid the foundation stone of the launch complex on 28 February 2024. Its location allows launches due south over the sea for polar orbits, without the dog-leg manoeuvre needed from Sriharikota.

6. **B) 1 and 3 only** – Statement 2 is wrong: green hydrogen is produced by electrolysis of water using renewable electricity; steam reforming of natural gas gives grey hydrogen (blue, if the CO2 is captured and stored). The Mission was approved on 4 January 2023 with an initial outlay of ₹19,744 crore and a target of 5 MMT per annum by 2030.

7. **B) 3 1 4 2** – J.C. Bose invented the crescograph to measure plant growth; Meghnad Saha gave the thermal ionisation (Saha) equation (1920) used in astrophysics; S.N. Bose's work on photon statistics (1924) led to Bose–Einstein statistics – particles called bosons are named after him; Har Gobind Khorana shared the 1968 Nobel Prize in Physiology or Medicine for interpreting the genetic code.

8. **A) Both A and R are true, and R is the correct explanation of A** – Both are true and R explains A. In a sealed pressure cooker the steam raises the pressure to well above atmospheric pressure, so water boils at about 120 °C instead of 100 °C; the higher temperature cooks food faster. For the same reason, water boils below 100 °C at high altitudes, where the air pressure is lower, and cooking takes longer there.

9. **B) Aeronautical Development Agency (ADA)** – Tejas was designed by the Aeronautical Development Agency (ADA), Bengaluru, under the Department of Defence Research and Development, and is manufactured by HAL. The first IAF squadron to operate it, No. 45 Squadron 'Flying Daggers', received it on 1 July 2016.

10. **B) 1 and 2 only** – Statement 3 is wrong: CRISPR is part of the adaptive immune system of bacteria (and archaea) against viruses; Charpentier and Doudna showed in 2012 that it can be reprogrammed to cut any chosen DNA sequence. The guide RNA leads the Cas9 enzyme – the 'genetic scissors' – to the target site.

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