Blackbook App

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RRB JE 2026 · CBT-1 · CEN 04/2026

GK & GS one-liners, topic-wise

General Awareness and General Science · English edition

315	7	13	27 Oct - 2 Nov
one-liners	shifts	subjects	exam dates

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GENERAL AWARENESS			
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GENERAL SCIENCE			
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Answers as per the official RRB key. Options are printed only where the answer depends on them. Small grey tag = exam date and shift.

1 History

RRB JE 2026 CBT-1 · GENERAL AWARENESS

14 one-liners · all 7 shifts

Modern India — 8

1 In 1639, the English East India Company established its first territorial possession in India (Fort St. George) by leasing land from a representative of which empire? 27 Oct 09:00 **:- Vijayanagara Empire**

2 Which movement was founded by Sir Syed Ahmed Khan? 27 Oct 12:45 **:- Aligarh Movement**

3 The British policy of "Divide and Rule" in India was primarily based on which assumption? 27 Oct 16:30 **:- Recognizing and solidifying pre-existing, rigid religious and caste identities was key to effective administration**

4 Which European power established its first factory at Masulipatnam in 1605 and later made Pulicat its headquarters in India? 28 Oct 09:00 **:- Dutch**

5 Which socio-religious reform movement was founded by Raja Rammohan Roy in 1828? 28 Oct 09:00 **:- Brahmo Samaj (promoting monotheism)**

6 The "Shuddhi Movement", aimed at reconversion to Hinduism, was a distinctive feature of which organisation? 28 Oct 12:45 **:- Arya Samaj**

7 Which of the following social reform movements, which gained momentum in the 19th century, was a direct response to the socio-cultural impact of British rule?
1) The Quit India Movement 2) The Brahmo Samaj
3) The Khilafat Movement
4) The Non-Cooperation Movement
28 Oct 12:45 **:- The Brahmo Samaj**

8 The Battle of Wandiwash in 1760 was decisive in ending the political ambitions of which European power in India? 2 Nov 09:00 **:- French**

Freedom Struggle — 5

9 Which Viceroy of India was associated with the Cabinet Mission Plan? 27 Oct 12:45 **:- Lord Wavell**

10 Which movement is associated with the slogan "Do or Die"? 27 Oct 16:30 **:- Quit India Movement**

11 Which event led to the withdrawal of the Non-Cooperation Movement in February 1922? 28 Oct 16:30 **:- Chauri Chaura incident**

12 What was the central idea of the Swadeshi movement in its early phase (pre-1905)? 28 Oct 16:30 **:- Protection of indigenous industries**

13 What primary methods were used by the Moderates to achieve their goals? 2 Nov 09:00 **:- Petitions, prayers, and memorandums**

Medieval India — 1

14 Which Mughal emperor granted Sir Thomas Roe a firmān allowing the English East India Company to establish factories and trade in Mughal territories? 27 Oct 09:00 **:- Jahangir**

2 Polity

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15 one-liners · all 7 shifts

Local Government — 6

1 By 1925, how many provinces in British India had enacted Panchayat Acts to formalise local self-governance? 27 Oct 09:00 **:- Eight**

2 What is a disaster-related function of the Panchayat Samiti? 27 Oct 16:30 **:- Providing relief during natural calamities**

3 Which authority is responsible for removing encroachments from public spaces within a village jurisdiction in India? 28 Oct 09:00 **:- Gram Panchayat**

4 The 73rd Constitutional Amendment Act in India relates to what? 28 Oct 12:45 **:- Panchayati Raj Institutions**

5 The powers and functions of the Gram Sabha in India are provided by which authority? 28 Oct 12:45 **:- The Legislature of the State**

6 Which Article of the Indian Constitution specifically mandates reservation of seats for Scheduled Castes and Scheduled Tribes in Panchayats? 2 Nov 09:00 **:- Article 243-D**

Fundamental Rights & Duties — 3

7 Which Article of the Indian Constitution guarantees the Right to Education? 27 Oct 09:00 **:- Article 21A**

8 Article 21 of the Constitution of India is related to which right? 27 Oct 12:45 **:- Protection of Life and Personal Liberty**

9 Which Constitutional Amendment Act made the Right to Education a fundamental right for children aged 6 to 14 years? 2 Nov 09:00 **:- 86th Amendment**

Constitution & Articles — 2

10 Which Article provides the 'Duty of the Union to Protect States' against external aggression and internal disturbance? 28 Oct 09:00 **:- Article 355**

11 Which Article of the Indian Constitution gives citizenship at the commencement of the Constitution? 28 Oct 16:30 **:- Article 5**

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Constitutional & Statutory Bodies 2

12 Who serves as the Chairperson of the National Disaster Management Authority (NDMA) as per the Disaster Management Act, 2005? 27 Oct 12:45
:- Prime Minister of India

13 Which body is responsible for auditing government expenditure in India? 27 Oct 16:30
:- Comptroller and Auditor General

Parliament & Executive 2

14 Which of the following is NOT a duty of the Vice-President as the Chairman of the Rajya Sabha?
1) Allowing members to speak
2) Maintaining order in the House
3) Casting a vote in every bill
4) Putting bills and motions to vote
27 Oct 12:45 **:- Casting a vote in every bill**

15 Which Constitutional Amendment made it obligatory for the President of India to act only on the advice of the Council of Ministers? 28 Oct 16:30
:- 42nd Amendment

3 RRB JE 2026 CBT-1 · GENERAL AWARENESS
Geography
27 one-liners all 7 shifts

Physical Geography of India 13

1 Geologically, the Andaman and Nicobar Islands are considered a southward extension of which mountain range? 27 Oct 09:00 **:- Arakan Yoma range**

2 What are the calcareous lime concretions in the older alluvial tract (terrace-like features above the floodplain) of the Northern Plains locally called? 27 Oct 12:45 **:- Kankar**

3 The marshy, forested Terai belt lying south of the Bhabar is well known for hosting which national park? 27 Oct 12:45 **:- Dudhwa National Park**

4 In the Northern Plains of India, the saline and alkaline efflorescence patches in the drier parts of the Bhangar are locally known by which term? 27 Oct 16:30 **:- Reh or Kallar**

5 What are the crescent-shaped sand dunes that cover larger areas of the Thar Desert known as? 27 Oct 16:30 **:- Barchans**

6 The Great Indian Desert lies towards which margin of the Aravali Range? 28 Oct 09:00 **:- Western margin**

7 The extensive Northern Plains of India were primarily formed by the depositional activities of which river systems? 28 Oct 09:00
:- Indus, Ganga, and Brahmaputra river systems

8 What is the narrow belt of pebbles deposited at the foot of the Shiwaliks, where descending streams disappear underground, known as? 28 Oct 12:45
:- Bhabar

9 In the Northern Plains, what is a fertile tract of land lying between two rivers locally termed? 28 Oct 12:45 **:- Doab**

10 Guru Shikhar, in the Mount Abu massif of Rajasthan, is the highest peak of which mountain range, regarded as the oldest fold-mountain system in India? 28 Oct 16:30 **:- Aravalli Range**

11 The highest peak of the Eastern Ghats, known as Jindhagada or Arma Konda, is located in which state? 28 Oct 16:30 **:- Andhra Pradesh**

12 Marine fossil deposits near Jaisalmer indicate that the Thar Desert region was once under the sea during which geological era? 2 Nov 09:00
:- Mesozoic era

13 The Peninsular Plateau of India is primarily composed of which type of rock formations? 2 Nov 09:00
:- Ancient gneisses and granites

Climate & Soils 4

14 Black soil, derived mainly from the weathering of Deccan Trap lava and suited to cotton, is found across which region of India? 27 Oct 12:45
:- Deccan Plateau

15 Why does temperature increase with height in the stratosphere? 27 Oct 16:30
:- Ozone absorbs UV rays and heats the layer

16 What primarily causes a valley breeze to move up a mountain slope during the day? 28 Oct 12:45
:- The mountain slope warms more quickly than the valley floor.

17 Which latitudinal region of the Earth receives the Sun's rays over the smallest area? 28 Oct 16:30
:- Equatorial region

Environment & Climate Change 3

18 According to IPCC assessment reports, which gas is the largest single contributor to anthropogenic greenhouse gas emissions? 27 Oct 09:00
:- Carbon dioxide

19 The Chipko Movement, in which villagers embraced trees to prevent felling, originated in which present-day state? 27 Oct 16:30 **:- Uttarakhand**

20 As per the Air Quality Index (AQI) developed by the Central Pollution Control Board, how many air pollutants are considered for calculating the AQI value? 2 Nov 09:00 **:- Eight pollutants**

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Minerals & Energy 3

21 Over ninety-seven percent of India's coal reserves occur in the valleys of Damodar, Sone, Mahanadi and which other river? 27 Oct 09:00 **:- Godavari**

22 India's oldest iron and steel plant, TISCO, was established in 1907 at the confluence of the Subarnarekha and Kharkai rivers in which city? 27 Oct 16:30 **:- Jamshedpur**

23 Which region is recognised as India's oldest crude-petroleum-producing area, with Digboi as its earliest field? 28 Oct 09:00 **:- Assam**

Agriculture 2

24 Which of the following is a kharif crop, sown with the onset of the south-west monsoon and harvested in autumn?
1) Gram 2) Mustard 3) Rice 4) Wheat
28 Oct 16:30 **:- Rice**

25 Rabi crops in India are typically sown in which period? 2 Nov 09:00 **:- October to December**

Rivers & Drainage 1

26 Which is the only large river flowing through the Great Indian Desert region? 27 Oct 09:00 **:- Luni**

World Geography 1

27 What is the main reason for the development of planetary wind patterns on Earth? 28 Oct 09:00
:- Uneven solar heating at different latitudes

4 RRB JE 2026 CBT-1 · GENERAL AWARENESS
Economy
14 one-liners · all 7 shifts

Economic Reforms & Planning 7

1 What was a key outcome of India's 1991 foreign exchange reforms? 27 Oct 09:00
:- Reducing government intervention and letting markets set rupee value

2 Which Five-Year Plan of India was postponed by two years due to political uncertainty at the centre and a worsening balance of payments, rising debt, budget deficits, industrial recession and inflation? 27 Oct 12:45 **:- Eighth Five-Year Plan**

3 The 1991 devaluation of the Indian rupee was primarily aimed at what? 28 Oct 09:00
:- Resolving the balance of payments crisis and increasing foreign exchange inflows

4 Which measure was adopted in India during the post-1991 period to reform public sector enterprises? 28 Oct 12:45
:- Disinvestment of government equity

5 The Bhilai Steel Plant in Chhattisgarh, set up during the Second Five-Year Plan, was established with the technical and financial collaboration of which country? 28 Oct 12:45 **:- Former Soviet Union**

6 The WTO Agreement on Agriculture (AoA) challenged Indian food security mainly through restrictions on which category of domestic subsidy? 28 Oct 16:30 **:- Amber Box support**

7 What was the main focus of the New Industrial Policy of 1991? 2 Nov 09:00
:- To liberalize the industrial licensing regime

Schemes & Programmes 5

8 Which programme was launched in October 1980 in place of the Food for Work Programme? 27 Oct 16:30
:- National Rural Employment Programme

9 When was the Jawahar Rozgar Yojana launched in India by merging NREP and RLEGP to provide employment to the rural poor? 28 Oct 09:00 **:- 1989**

10 Which government scheme encourages rural women to participate in micro-enterprises through Self Help Groups? 28 Oct 12:45
:- Deendayal Antyodaya Yojana - National Rural Livelihoods Mission

11 In which year was the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) launched to develop basic infrastructure in selected cities and towns? 28 Oct 16:30 **:- 2015**

12 Which scheme provides financial assistance to landholding farmer families across India, subject to certain exclusion criteria, for agriculture, allied activities and domestic needs? 2 Nov 09:00
:- Pradhan Mantri Kisan Samman Nidhi

Banking & Finance 2

13 Which of the following is a quantitative tool of monetary policy used by the Reserve Bank of India?
1) Budget 2) Direct Action 3) Moral Suasion
4) Statutory Liquidity Ratio
27 Oct 12:45 **:- Statutory Liquidity Ratio**

14 What is the 'Repo Rate', a monetary policy tool of the Reserve Bank of India (RBI)? 27 Oct 16:30
:- Rate at which RBI lends to commercial banks for short-term

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5 Art & Culture

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6 one-liners all 7 shifts

Dance & Music 3

1 Which classical dance form is characterised by the 'Tribhanga' posture, involving three bends at the neck, torso and knees? 27 Oct 09:00 **:- Odissi**

2 The Chhau dance, which combines martial traditions with storytelling, is mainly associated with which states? 28 Oct 16:30 **:- Odisha, West Bengal and Jharkhand**

3 Tappa, a classical vocal form, is noted for what? 2 Nov 09:00 **:- Rapid melodic ornamentation**

Literature & Language 1

4 Which Classical Language is associated with the works of Kalidasa, Bhasa and Bhavabhuti? 27 Oct 16:30 **:- Sanskrit**

Monuments & Architecture 1

5 The Nagara style of Hindu temple architecture, marked by a curvilinear shikhara, is primarily associated with which region of India? 28 Oct 09:00 **:- North India**

Painting & Crafts 1

6 Madhubani painting, known for its double-outlined figures and dense floral borders, originated in which Indian state? 28 Oct 12:45 **:- Bihar**

6 Sports

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6 one-liners all 7 shifts

Sports 6

1 The first Khelo India Tribal Games 2026 were scheduled across which three cities of Chhattisgarh? 27 Oct 09:00 **:- Raipur, Jagdalpur and Sarguja**

2 Which Indian cricketer became the fourth Indian to surpass 20,000 international runs in December 2025? 27 Oct 12:45 **:- Rohit Sharma**

3 At the Asian Relay Championships 2026, India's women's team won gold with a season-best timing of 43.85 seconds in which relay event? 27 Oct 16:30 **:- Women's 4×100 m relay**

4 At the Asian U20 Athletics Championships 2026, Pooja Singh broke a 14-year-old national record by clearing 1.93 m. In which event? 28 Oct 09:00 **:- Women's high jump**

5 The 2026 Khelo India Winter Games were organised in two legs. Which category of sports mainly featured in the Ladakh leg? 28 Oct 12:45 **:- Ice sports**

6 At the Khelo India Winter Games 2026, in which event did Udreka Singh of Madhya Pradesh win the gold medal? 28 Oct 16:30 **:- Ice Skating, Long Track 500m**

7 Awards & Books

RRB JE 2026 CBT-1 · GENERAL AWARENESS

2 one-liners all 7 shifts

Awards & Books 2

1 In which year was Rabindranath Tagore awarded the Nobel Prize in Literature? 27 Oct 12:45 **:- 1913**

2 After the death of its author in July 2026, which book by Shahrnush Parsipur became the focus of international attention? 2 Nov 09:00 **:- Women Without Men**

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8 Current Affairs

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14 one-liners all 7 shifts

International & Summits 6

1 Where was the 20th Session of the UNESCO Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage (ICH) held in December 2025? 27 Oct 09:00
:- Red Fort Complex, New Delhi

2 Which capital city hosted the high-level ministerial Quad meeting in July 2026, addressing free navigation networks and maritime security during ASEAN framework discussions? 27 Oct 09:00 **:- Manila**

3 Which country hosted the 75th Lindau Nobel Laureate Meeting held during June-July 2026? 27 Oct 12:45 **:- Germany**

4 Which Middle Eastern country's bilateral investment agreement with India came into force in July 2026, to create a secure and modern legal framework for cross-border investments? 28 Oct 09:00
:- State of Israel

5 Which head of government hosted the Indian Prime Minister in Auckland in July 2026, during the first visit by an Indian Prime Minister to New Zealand in 40 years? 28 Oct 12:45
:- Christopher Luxon

6 Which Vietnamese resort island in the Gulf of Thailand gained international news coverage in July 2026 due to a major maritime tourist safety and emergency response event? 28 Oct 16:30
:- Phu Quoc Island

National 4

7 In the Tamil Nadu Assembly election results of 2026, which party emerged as the single largest party? 27 Oct 16:30 **:- Tamilaga Vettri Kazhagam**

8 India's first-ever open-sea Marine Fish Farming project was inaugurated from which location in January 2026? 28 Oct 09:00 **:- Andaman Sea**

9 In the sequence of Indian censuses, what will the population enumeration scheduled for 2027 be known as? 28 Oct 16:30 **:- 16th Census of India**

10 In the Union Budget 2026-27, which mission was announced to transform India's sports sector over the next decade? 2 Nov 09:00 **:- Khelo India Mission**

Defence 3

11 The revised Delegation of Financial Powers for Defence Services, released in June 2026, mainly aimed at strengthening which aspect of defence administration? 27 Oct 12:45
:- Operational efficiency of field commanders

12 Exercise MILAN 2026, the Indian Navy's premier multilateral maritime exercise, concluded with its closing ceremony aboard which vessel? 28 Oct 12:45
:- INS Vikrant

13 The 7th edition of Exercise DUSTLIK in 2026 was conducted between India and which Central Asian country? 2 Nov 09:00 **:- Uzbekistan**

Reports & Indices 1

14 According to the 2026 edition of the Henley Passport Index, which country had the world's most powerful passport with visa-free access to 192 destinations? 27 Oct 16:30 **:- Singapore**

9 Science & Tech News

RRB JE 2026 CBT-1 · GENERAL AWARENESS

7 one-liners all 7 shifts

Technology 5

1 AIKosh, highlighted in India's AI governance and innovation ecosystem in 2026, is mainly associated with what? 27 Oct 12:45
:- AI datasets and sectoral models

2 The India Semiconductor Mission 2.0, announced in the Union Budget 2026-27, focuses on which area? 27 Oct 16:30
:- Chip equipment, materials and advanced manufacturing

3 In January 2026, the PARAM Rudra supercomputer was inaugurated at IIT Bombay. Under which mission was it developed and deployed? 28 Oct 09:00 **:- National Supercomputing Mission**

4 In March 2026, PM-STIAC discussed Advanced Manufacturing Systems as a priority area for India's technology ecosystem. What was the main focus of this discussion? 28 Oct 12:45
:- Strengthening India's advanced manufacturing capabilities

5 In February 2026, which model was described as the text foundation model in 22 scheduled Indian languages under BharatGen, India's government-supported sovereign Large Language Model initiative? 2 Nov 09:00 **:- Param-2**

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Health & Medicine 2

6 In December 2025, which institution conducted India's first clinical trial of the 'Supernova Stent' for the treatment of stroke? 27 Oct 09:00

:- All India Institute of Medical Sciences, New Delhi

7 Which world's first humanised CAR-T cell therapy did the Prime Minister launch at the Emerging Science, Technology & Innovation Conclave (ESTIC) 2025 in November 2025? 28 Oct 16:30

:- NexCAR19

10 RRB JE 2026 CBT-1 · GENERAL AWARENESS
Misc

2 one-liners all 7 shifts

Health Programmes 1

1 When was the National Rural Health Mission (NRHM) officially launched in India? 27 Oct 09:00

:- 2005

Organisations 1

2 The 2030 Agenda for Sustainable Development, adopted by the UN General Assembly in 2015, consists of how many Sustainable Development Goals (SDGs)? 28 Oct 12:45

:- 17

11 RRB JE 2026 CBT-1 · GENERAL SCIENCE
Physics

70 one-liners all 7 shifts

Light: Reflection & Refraction 11

1 If the object distance is negative in the mirror formula, what does this indicate about the object's position? 27 Oct 12:45

:- The object is placed in front of the mirror

2 What happens to a ray of light when it passes from air into a glass convex lens? 27 Oct 12:45

:- It bends towards the normal as it enters the lens

3 When white light splits into a spectrum through a prism, which factor primarily determines the order of the colours? 27 Oct 12:45

:- The variation in refractive index for different wavelength

4 Why should a lifeguard not dive exactly toward the apparent position of an object under water? 27 Oct 16:30

:- The object appears shallower due to refraction

5 Light bends towards the normal when entering water from air. What does this suggest about the refractive index of water compared to air? 27 Oct 16:30

:- Water has a higher refractive index than air

6 A ray of light passes through a rectangular glass slab and emerges into air. How is the emergent ray related to the incident ray? 28 Oct 12:45

:- It is parallel to the incident ray but laterally displaced.

7 While finding the focal length of a concave mirror by the distant object method, what happens to the image if the screen is placed slightly away from the correct focus? 28 Oct 16:30

:- The image will appear slightly blurred due to being out of focus

8 In a spherical mirror, what is the line passing through the pole and the centre of curvature called? 2 Nov 09:00

:- Principal axis

9 A 2 cm tall object is placed 30 cm in front of a concave mirror of focal length 15 cm. What is the magnification? 2 Nov 09:00

:- -1 (inverted image of the same size as the object)

10 In the sequence of colours formed by dispersion (VIBGYOR), the order is based on what? 2 Nov 09:00

:- Increasing wavelength

11 Which phenomenon is primarily responsible for the formation of a rainbow after rainfall? 2 Nov 09:00

:- Dispersion of sunlight by water droplets due to refraction and internal reflection

> **NOTE**
> The Hindi paper's option says scattering; the English paper says dispersion, the process that splits sunlight into colours in a rainbow.

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Work, Energy & Power 11

12 An object moving with constant velocity is stopped after a distance s by a retarding force F in the opposite direction. How is the work done by this force represented? 27 Oct 09:00

:- F × (-s) or -F × s (negative work)

> **NOTE**
> The Hindi paper printed "positive work" in this option. The English paper and the answer give negative work, because the force acts opposite to the motion.

13 A cart is pulled 5.4 m along a horizontal surface by a 40 N force at 30° to the horizontal. What is the work done by the force (approximately)? 27 Oct 12:45

:- 187 J

14 An object is moved 7 m horizontally by a constant force of 250 N, then lifted 1 m vertically by the same force. In which case is more work done? 27 Oct 12:45

:- More work is done during horizontal motion because the displacement is greater.

15 A bird starts from rest and flaps its wings to reach 6 m/s. How does the bird gain kinetic energy? 27 Oct 16:30

:- Its muscles convert stored chemical energy into kinetic energy

16 A glowing bulb and an electric heater are kept in two separate closed boxes, and both boxes become warm. Which form of energy is finally transferred to the surroundings? 28 Oct 09:00

:- Thermal (heat) energy

17 A force applied at the free end of a hinged rod makes it rotate about the hinge. What is the work done by the force? 28 Oct 09:00

:- Positive, because the point of application of the force is displaced.

18 A sculpture is lifted above the roof of a building and then placed on the roof. Compared to its highest point during lifting, how is its gravitational potential energy after installation? 28 Oct 12:45 **:- Less**

19 A force of 350 N acting at 40° to the horizontal pulls a sack through 12 m. What is the work done? 28 Oct 12:45 **:- 3220 J**

20 An escalator lifts a 120 kg crate vertically through 7.5 m in 28 s and delivers only 80% of the ideal output power (g = 9.8 m/s²). What is its actual average output power? 28 Oct 12:45 **:- 252 W**

21 How does the gravitational potential energy of a container change when an elevator lifts it vertically to a higher floor? 28 Oct 16:30

:- It increases by mgh, where m is the mass, g is the acceleration due to gravity and h is the vertical height gained

22 Girl A (weight 400 N) climbs 8 m in 20 s and Girl B (weight 400 N) climbs the same height in 50 s. What is the difference in the power expended by them? 28 Oct 16:30 **:- 96 W**

Motion 9

23 What does a velocity-time graph that is a horizontal line above the time axis indicate? 27 Oct 09:00

:- The object is moving at a constant positive velocity

24 A ball starting from rest rolls down a slope with a constant acceleration of 3 m/s² for 4 s. What is its final velocity? 27 Oct 12:45 **:- 12 m/s**

25 A ball tied to a string is swung in a horizontal circle at constant speed. What happens if the string suddenly breaks? 28 Oct 09:00

:- The ball moves in a straight line tangential to the circle at the breaking point.

26 When is a body said to be in uniform motion? 28 Oct 09:00

:- When it covers equal distances in equal intervals of time

27 A drone accelerates uniformly from rest to 12 m/s in 6 s, keeps this velocity for 8 s, then decelerates uniformly to rest in 4 s. What total distance does it cover? 28 Oct 12:45 **:- 156 meters**

28 If a car covers equal distances in equal intervals of time, what does its distance-time graph show? 28 Oct 16:30

:- A straight line inclined with the time axis

29 A train accelerates uniformly from 10 m/s to 30 m/s in 4 s. What is its acceleration? 28 Oct 16:30

:- 5 m/s²

30 A body has velocity 5 m/s at t = 0 s and its velocity-time graph is a straight line of slope 3 m/s². What is its velocity after 8 s? 2 Nov 09:00 **:- 29 m/s**

31 How is uniform motion distinguished from non-uniform motion on a distance-time graph? 2 Nov 09:00

:- A straight line represents uniform motion, while a curved line generally represents non-uniform motion

Force & Laws of Motion 8

32 What is the average force on a 0.06 kg seed given a uniform acceleration of 7 m/s² for 0.8 s? 27 Oct 09:00

:- 0.42 N

33 In a spacecraft, a technician pushes a loose panel without touching anything else; the panel moves one way and the technician drifts the opposite way. Which explanation best describes this? 27 Oct 09:00

:- The technician and panel experience equal forces in opposite directions, causing both to move apart

34 If the mass of a body is doubled but its acceleration is kept unchanged (resistive forces negligible), what happens to the force required? 27 Oct 12:45

:- The force required becomes twice as large as before

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35 By Newton's third law, why does a hovering drone rise when its rotors accelerate above a dense gas? 27 Oct 12:45

:- The rotors push the dense gas downward, and the gas exerts an equal upward force on the drone, causing it to rise.

36 A loaded cart accelerates at 0.5 m/s² under a force of 36 N. What happens to its acceleration if the force is doubled and the mass stays the same? 27 Oct 16:30 **:- The acceleration doubles**

37 When a rotating turntable carrying two marbles is stopped abruptly, how do the marbles move immediately after it halts? 28 Oct 16:30

:- They continue moving tangentially due to their inertia

38 A 500 kg rocket engine gives a constant thrust of 10,000 N for 10 s. If the initial velocity was 100 m/s, what is the final velocity? (Ignore gravity and air resistance) 28 Oct 16:30 **:- 300 m/s**

39 When a package lands on a spring-loaded platform, which pair of forces forms the action-reaction pair according to Newton's third law? 2 Nov 09:00

:- The package pushes on the platform, and the platform pushes back on the package with equal force

Electricity 7

40 Three resistors 18 Ω, 28 Ω and 36 Ω are connected in parallel. What is the equivalent resistance? 27 Oct 12:45 **:- 8.40 Ω**

> **NOTE**
> The Hindi paper printed 8 Ω here; the English paper and the answer use 18 Ω.

41 A new filament is twice as long and made of a material with half the resistivity, with the same cross-sectional area. How does its resistance compare with the old one? 27 Oct 12:45

:- It will remain the same as before

42 1 A current passes through a bulb for 10 s. If the current is doubled for the same time, how much charge passes compared with the initial case? 27 Oct 16:30 **:- Double the initial charge**

43 With the battery voltage unchanged, what change in a lantern's circuit makes its bulb glow brighter? 28 Oct 09:00

:- The resistance in the bulb circuit is decreased, increasing current

44 Two wires of the same material have lengths in the ratio 1 : 3 and areas of cross-section in the ratio 2 : 1. What is the ratio of their resistances? 28 Oct 12:45

:- 1 : 6

45 Of two wires of the same length and diameter, one of nichrome and one of silver, which should be chosen to reduce circuit resistance and minimise heat loss? 28 Oct 12:45 **:- Silver**

46 A copper wire of length 2 m and cross-sectional area 1×10^{-6} m² has a resistance of 0.034 Ω. What is the resistivity of copper? 28 Oct 16:30

:- 1.7×10^{-8} Ω·m

Sound 7

47 A person claps near a cliff. Which observation confirms that the repeated sound is an echo? 27 Oct 16:30

:- The reflected sound is heard after a noticeable delay

48 A sound wave travels through seawater at 1500 m/s with a wavelength of 2.5 m. What is its frequency? 27 Oct 16:30 **:- 600 Hz**

49 Why does striking a desk harder with a pencil produce a louder sound than a gentle strike? 28 Oct 09:00

:- The harder strike creates vibrations of greater amplitude.

50 In a large hall with bare walls and a hard ceiling, why does sound persist after the speaker stops, making speech unclear? 28 Oct 16:30

:- Multiple reflections of sound from hard surfaces cause reverberation

51 What happens to the speed of sound in a medium when its temperature is increased? 28 Oct 16:30

:- It increases

52 Of a low-frequency siren and a high-frequency siren, which produces a higher pitch? 2 Nov 09:00

:- The high-frequency siren, because pitch depends on frequency

53 In SONAR, what condition of the underwater object would prevent detection of a clear echo? 2 Nov 09:00

:- The object absorbs most of the sound energy instead of reflecting it

Human Eye 6

54 What is the relationship between the apparent position and the actual position of a star when observed? 27 Oct 09:00

:- The apparent position is slightly different from the actual position

55 Which combination of vision defects is commonly corrected using bifocal lenses? 27 Oct 09:00

:- Presbyopia and myopia

56 If the Earth's atmosphere were absent, which of the following phenomena would NOT be observed?

1) Phases of the Moon
2) Advance sunrise and delayed sunset
3) Occurrence of a solar eclipse
4) The Sun's daily motion

27 Oct 16:30 **:- Advance sunrise and delayed sunset**

57 Why does a rainbow display a sequence of colours in the sky after rain? 28 Oct 12:45

:- Because sunlight is dispersed into its constituent colours by water droplets.

58 Which natural phenomenon involves refraction and dispersion of sunlight in a manner similar to a glass prism? 28 Oct 12:45

:- Formation of a rainbow after rainfall

59 When looking at a nearby object, how does the human eye adjust for clear vision? 2 Nov 09:00

:- The lens becomes thicker to increase its focal power

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Lenses & Optics 5

60 Using the sign convention, which signs of object distance and image distance confirm a real and inverted image in a convex lens? 27 Oct 09:00
:- Object distance negative, image distance positive

61 If an object is placed at 2F from a convex lens, what is the magnitude of the magnification of the image? 27 Oct 09:00 **:- Exactly one**

62 Of two convex lenses made of the same material, how does the focal length of the more strongly curved lens compare? 27 Oct 09:00
:- The more strongly curved lens has a shorter focal length

63 A converging lens of power +5 D has its focal length changed to 15 cm due to heating. What is its new power? 28 Oct 09:00 **:- +6.67 D**

64 According to the Cartesian sign convention for spherical lenses, what is the sign of the object distance for a real object placed in front of the lens? 28 Oct 09:00 **:- Negative**

Magnetism 4

65 Without changing the current or the chamber size, which modification most effectively increases the magnetic field inside a solenoid (e.g., in an MRI machine)? 27 Oct 16:30
:- Increasing the number of tightly wound turns per unit length of the solenoid

66 If the current in a vertical wire flows upward, what is the direction of the magnetic field lines around it when viewed from above? 28 Oct 09:00
:- Anti-clockwise

67 Why does a compass held near a buried vertical pipe carrying a steady upward current deflect instead of pointing north? 28 Oct 09:00
:- The magnetic field of the upward current is horizontal, so the needle aligns tangentially to the pipe's magnetic field at that location.

68 A flat current-carrying metallic strip lies horizontally above a conveyor belt, with a strong uniform magnetic field applied vertically upward through it. If the belt suddenly accelerates eastward while the current in the strip flows south, what best describes the direction of the net force on the strip?
1) Opposite to the current's direction, toward the entrance of the lab
2) Perpendicular to both the magnetic field and current, directed toward the wall behind the belt
3) Parallel to the belt's motion, directed east
4) Downward, along the magnetic field direction
28 Oct 12:45
:- Perpendicular to both the magnetic field and current, directed toward the wall behind the belt

Modern Physics 1

69 Why do microwaves and radio waves contribute little to warming the Earth? 27 Oct 12:45
:- They carry very little energy

Simple Machines 1

70 In a lever, the fulcrum is placed closer to the load than to the effort. What is the advantage of this arrangement? 27 Oct 09:00
:- Less effort is required, but the effort moves through a greater distance

12 RRB JE 2026 CBT-1 · GENERAL SCIENCE
Chemistry
72 one-liners, all 7 shifts

Atomic Structure 17

1 What are isotopes? 27 Oct 09:00
:- Atoms with the same atomic number but different mass numbers

2 What determines the identity of an element when comparing atoms of different elements? 27 Oct 09:00
:- The number of protons in the nucleus

3 How is the mass number of an atom determined? 27 Oct 09:00
:- It is the total number of protons and neutrons in the nucleus

4 What does the atomic number determine in a neutral atom? 27 Oct 12:45
:- Atomic number determines the number of electrons in a neutral atom.

5 From what is the symbol Fe for iron derived? 27 Oct 12:45 **:- Its Latin name ferrum**

6 How many electrons are in the outermost shell of Chlorine (Z = 17) and Neon (Z = 10), respectively? 27 Oct 16:30 **:- 7, 8**

7 Calcium (atomic number 20, mass number 40) and argon (atomic number 18, mass number 40) are what kind of atoms, and why? 27 Oct 16:30
:- Isobars, because they have the same mass number but different atomic numbers

8 As per Bohr's atomic model, what is the electronic configuration of Calcium (atomic number 20)? 27 Oct 16:30 **:- 2, 8, 8, 2**

9 Why do Bohr's postulates fail for multi-electron atoms although they explain the stability of hydrogen? 27 Oct 16:30
:- Electron-electron interactions are not considered in Bohr's model

10 What is the atomic symbol of Sodium, based on the rules for writing symbols of atoms? 28 Oct 09:00
:- Na

11 What are atoms of different elements with different atomic numbers but the same mass number known as? 28 Oct 09:00 **:- Isobars**

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12 Which expression gives the maximum number of electrons in the nth energy level (shell) of an atom? 28 Oct 09:00 **:- $2n^2$**

13 Based on Rutherford's model, what is concluded from observing a tiny positively charged centre surrounded by mostly empty space in an atom? 28 Oct 12:45

:- The atom has a dense central nucleus with electrons orbiting around it

14 How is an ion formed from a neutral atom? 28 Oct 12:45

:- By gaining or losing electrons while the number of protons remains unchanged

15 What is the symbol of the element with 3 protons and 4 neutrons? 28 Oct 16:30 **:- Li**

16 Why is the relative atomic mass of chlorine 35.5 even though no chlorine atom has this exact mass? 28 Oct 16:30

:- Chlorine atoms exist as a mixture of isotopes with different masses

17 Where did Rutherford conclude that the positive charge and mass of an atom are concentrated? 2 Nov 09:00 **:- In the nucleus**

Metals & Non-metals 15

18 Which combination of metal and solution would NOT result in a displacement reaction based on the reactivity series?

1) Zinc placed in lead nitrate solution
2) Magnesium placed in copper sulfate solution
3) Copper placed in zinc sulfate solution
4) Iron placed in copper sulfate solution

27 Oct 09:00 **:- Copper placed in zinc sulfate solution**

19 During electrolytic refining of copper, what happens to the impurities in the impure copper anode? 27 Oct 09:00

:- They settle below the anode as anode mud

20 Why is the enrichment of ores necessary before extracting metals? 27 Oct 12:45

:- To reduce the cost and energy required during metal extraction by removing impurities

21 Which metal reacts with moist carbon dioxide in the air, slowly loses its shiny brown surface and gains a green coat? 27 Oct 12:45 **:- Copper**

22 Electrolytic refining is used for the purification of what? 27 Oct 16:30 **:- Metals**

23 Which metal will be least reactive in reaction with HCl?

1) Magnesium 2) Zinc 3) Iron 4) Aluminium

27 Oct 16:30 **:- Iron**

24 The sonority of a metal is due to what? 27 Oct 16:30

:- Its ability to vibrate when struck

25 Why does a sodium atom form a positive ion when it reacts with chlorine? 27 Oct 16:30

:- It loses one electron to achieve a stable electronic configuration

26 Which reaction represents the combination of a non-metal with oxygen?

1) $2Na + Cl_2 \rightarrow 2NaCl$
2) $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$ 3) $C + O_2 \rightarrow CO_2$
4) $CaCO_3 \rightarrow CaO + CO_2$

28 Oct 09:00 **:- $C + O2 \rightarrow CO2$**

27 Why do ionic compounds generally have high melting points? 28 Oct 12:45

:- They have strong electrostatic forces between ions

28 Why is carbon not used to extract highly reactive metals like magnesium and aluminum from their ores? 28 Oct 16:30

:- These metals have more affinity for oxygen than carbon

29 What is the most effective way to prevent corrosion of iron pipes exposed to moist air? 28 Oct 16:30

:- Coating the iron pipes with zinc to prevent direct contact with air and moisture

30 What does the reactivity series represent? 28 Oct 16:30

:- Arrangement of metals in order of their reactivity

31 Why do ionic compounds conduct electricity in the molten state but not in the solid state? 2 Nov 09:00

:- Because ions can move freely in the molten state

32 Why are metals generally good conductors of heat and electricity? 2 Nov 09:00

:- Presence of free electrons in their structure

Acids, Bases & Salts 12

33 Why should Plaster of Paris be stored in airtight containers? 27 Oct 09:00

:- It absorbs moisture and hardens

34 How is sodium hydroxide (NaOH) prepared on an industrial scale? 27 Oct 09:00

:- By the electrolysis of sodium chloride solution

35 A substance in water turns blue litmus red and increases electrical conductivity. What is it most likely? 27 Oct 12:45 **:- An acid**

36 What are the products of a neutralisation reaction? 27 Oct 16:30 **:- Always a salt and water**

37 Five aqueous solutions have pH values 1, 4, 7, 9 and 11. What is the increasing order of their hydrogen ion (H^+) concentration? 28 Oct 09:00

:- 11 < 9 < 7 < 4 < 1

38 Why is sodium hydroxide widely used in manufacturing soaps and detergents industrially? 28 Oct 09:00

:- It reacts with fats forming soap and glycerol

39 What is formed when an acid reacts with a base in a neutralisation reaction? 28 Oct 12:45

:- Salt and water

40 Which combination of reactants is used to prepare baking soda on a large scale? 28 Oct 12:45

:- Sodium chloride, ammonia, and carbon dioxide in water

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41 How is litmus paper used to distinguish between an acid and a base in the laboratory? 28 Oct 12:45

:- Acids turn blue litmus paper red, and bases turn red litmus paper blue.

42 Which of the following statements about bleaching powder is correct? (I) It is prepared by passing chlorine gas over dry slaked lime. (II) It is used for bleaching cotton and linen in textile industries. (III) It is used to disinfect drinking water. (IV) It is prepared by passing carbon dioxide over slaked lime.

1) Only I, III and IV 2) Only II, III and IV
3) Only I, II and III 4) Only I and II

28 Oct 12:45 **:- Only I, II and III**

43 What characteristic change allows litmus solution to identify whether an aqueous substance is acidic or basic? 28 Oct 16:30

:- Colour changes differently in acidic and basic solutions

44 Which of the following will turn blue litmus paper red?

1) Only (c) and (a) 2) Only (b) and (c)
3) Only (a) and (b) 4) Only (b)

2 Nov 09:00 **:- Only (b)**

Mole Concept 8

45 What is the formula unit mass of sodium carbonate (Na2CO3)? (Na = 23 u, C = 12 u, O = 16 u) 27 Oct 09:00 **:- 106 u**

46 Which statement about water illustrates the Law of Constant Proportions? 27 Oct 12:45

:- Water always contains hydrogen and oxygen in a fixed ratio by mass.

47 If the molecular mass of a diatomic element X_2 is 70 u, what is the atomic mass of X? 27 Oct 12:45

:- 35 u

48 How is the molecular mass of a compound calculated? 28 Oct 09:00

:- By adding the atomic masses of all atoms present in the molecule.

49 What is the atomic mass of a carbon atom as commonly used in science? 28 Oct 09:00 **:- 12 u**

50 What is the chemical formula of water? 28 Oct 12:45

:- H2O

51 What is the chemical formula of a compound containing two aluminium atoms, three sulfur atoms and twelve oxygen atoms? 2 Nov 09:00 **:- $Al_2(SO_4)_3$**

52 According to the Law of Constant Proportions, what is true of two samples of water from different sources? 2 Nov 09:00

:- Both samples contain hydrogen and oxygen combined in the same mass ratio

NOTE
The Hindi paper printed this question in English.

Matter & Its States 6

53 When a beam of light passes through a mixture of water and fine chalk powder, its path becomes visible. Which concept explains this? 27 Oct 09:00

:- Tyndall Effect

54 During which stage of the water cycle does water vapour change into liquid form, often leading to cloud formation? 27 Oct 12:45 **:- Condensation**

55 Why is the Tyndall effect NOT observed in a true solution? 27 Oct 16:30

:- Particles in a true solution are too small to scatter light

56 Which of the following is an example of a solution?

1) Rice mixed with pulses 2) Oil mixed with water
3) Sodium chloride dissolved in water
4) Sand mixed with iron filings

28 Oct 12:45 **:- Sodium chloride dissolved in water**

57 How does the solubility of most solid solutes in water change when the temperature increases? 2 Nov 09:00 **:- It increases as temperature increases**

58 Which process separates colloidal particles from a heterogeneous mixture by causing them to aggregate and settle? 2 Nov 09:00 **:- Coagulation**

Carbon & Its Compounds 5

59 Which of the following statements is INCORRECT regarding organic compounds?

1) Friedrich Wöhler disproved the 'vital force theory' in 1838.
2) Friedrich Wöhler disproved the 'Vital force theory' by preparing urea from ammonium cyanate.
3) Two characteristic features, tetravalency and catenation, are seen in carbon.
4) In vital force theory, compounds were initially extracted from natural substances.

27 Oct 09:00

:- Friedrich Wöhler disproved the 'vital force theory' in 1838.

NOTE
Wöhler prepared urea from ammonium cyanate in 1828, so the year 1838 makes this statement the incorrect one.

60 Members of a homologous series have the same what? 27 Oct 12:45 **:- General formula**

61 Which of the following compounds can undergo an addition reaction, and what feature of its structure makes this possible?

1) Ethene; Because it contains a double bond
2) Propane; Because it contains only single bonds
3) Ethanol; Because it has a hydroxyl group
4) Methanoic acid; Because it contains a carboxylic group

27 Oct 12:45

:- Ethene; because it contains a double bond

62 Which allotrope of carbon does not conduct electricity? 27 Oct 16:30 **:- Diamond**

63 What is the hardest natural substance known, which is also an allotrope of carbon? 28 Oct 09:00

:- Diamond

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Chemical Reactions & Equations — 5

64 Why does a silver spoon turn black after several months of use? 28 Oct 09:00
:- Silver reacts with sulphur in the air to form silver sulphide.

65 In terms of electron movement, what is a reduction reaction? 28 Oct 12:45
:- Reduction involves gain of electrons by a substance.

66 What does a double displacement reaction involve? 28 Oct 16:30
:- Exchange of ions between reactants

67 What are the coefficients that balance the equation $Na + H_2O \rightarrow NaOH + H_2$? 2 Nov 09:00
:- $2Na, 2H_2O, 2NaOH, 1H_2$

68 Which of the following is an example of a one-step oxidation reaction?
1) $C + O_2 \rightarrow CO_2$ 2) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$
3) $2H_2 + O_2 \rightarrow 2H_2O$ 4) $2KBr + Cl_2 \rightarrow 2KCl + Br_2$
2 Nov 09:00
:- $C + O_2 \rightarrow CO_2$

> **NOTE**
> $2H_2 + O_2 \rightarrow 2H_2O$ (another option) is also a one-step oxidation; the answer shown is as per the RRB key.

Atoms & Molecules — 3

69 What are the molecules of a compound made of? 28 Oct 16:30
:- Different atoms chemically bonded together

70 What is the chemical formula of ferric oxide? 28 Oct 16:30
:- Fe_2O_3

71 Which of the following is a diatomic molecule of a compound?
1) H 2 2) HCl 3) O 2 4) Cl 2
28 Oct 16:30
:- HCl

Periodic Classification — 1

72 Which symbol represents the element Oxygen in the periodic table? 27 Oct 12:45
:- O

13 RRB JE 2026 CBT-1 · GENERAL SCIENCE
Biology
66 one-liners · all 7 shifts

Reproduction — 15

1 What is the release of a mature egg every month from an ovary in human females called? 27 Oct 12:45
:- Ovulation

2 Why does the inner lining of the uterus thicken each month during a woman's reproductive years? 27 Oct 12:45
:- To prepare for possible implantation of a fertilized egg

3 Why is a flower covered with a cloth bag during pollination experiments? 27 Oct 12:45
:- To prevent unwanted pollen from reaching the flower

4 For sperm formation, the scrotum keeps the testicular temperature at what level compared with normal body temperature? 27 Oct 16:30
:- Lower than normal body temperature

5 In flowering plants, which event occurs after pollen grains reach the stigma? 27 Oct 16:30
:- Fertilization takes place inside the ovule

6 If a mother or foetus faces risk during delivery, what action might a doctor take? 27 Oct 16:30
:- Perform surgical procedures to ensure a safe delivery

7 What is the role of glands in the male reproductive system? 28 Oct 09:00
:- They add fluids that nourish the sperm

8 How does internal fertilisation provide an advantage to reptiles, birds and mammals? 28 Oct 12:45
:- It increases the survival chances of young ones by protecting the embryo

9 What is the main function of barrier contraceptive methods such as condoms and vaginal covers? 28 Oct 12:45
:- They prevent sperm from reaching the egg

10 What happens to the inner lining of the uterus in human females if the egg is not fertilised? 28 Oct 16:30
:- It sheds and leaves the body

11 What happens to the bud of a Hydra after it enlarges during budding? 28 Oct 16:30
:- It separates to live as a new organism

12 Which organ is most likely involved when a woman has difficulty carrying a pregnancy to term due to weak muscular support for the developing foetus? 28 Oct 16:30
:- Uterus

13 What is the function of the pollen tube in the reproduction of flowering plants? 2 Nov 09:00
:- It carries the male gamete to the ovule

14 What do ovules become after fertilisation in flowering plants? 2 Nov 09:00
:- Seeds

15 Why is the stigma of wind-pollinated plants like maize typically long and feathery? 2 Nov 09:00
:- To effectively trap airborne pollen grains

Tissues — 13

16 Which muscular tissue is composed of long, cylindrical, unbranched, multinucleate cells and enables voluntary body movement? 27 Oct 09:00
:- Striated muscle tissue

17 What is the main role of apical meristem in plant growth? 27 Oct 09:00
:- Increase in length of stem and roots

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18 What is the main function of xylem vessels in complex permanent tissue? 27 Oct 12:45
:- Transporting water and minerals upward

19 What is the arrangement and function of lateral meristem in plant stems? 27 Oct 16:30
:- Arranged in rings, increases diameter

20 What is the main role of tracheids and vessels in xylem tissue? 27 Oct 16:30
:- They transport water and minerals upward

21 In nervous tissue, what is the primary function of neurons? 28 Oct 09:00
:- Neurons receive and transmit messages

22 Which kind of tissue do plants lack for conducting immediate responses to stimuli? 28 Oct 09:00
:- Nervous tissue

23 What is the main function of parenchyma cells? 28 Oct 12:45 **:- Storage and photosynthesis**

24 Why do meristematic cells generally lack large vacuoles? 28 Oct 12:45
:- They divide continuously for growth

25 Why are plant tissues generally not specialised for movement like animal tissues? 28 Oct 12:45
:- Plants do not require locomotion.

26 Why do muscles need nervous tissue to function? 28 Oct 16:30 **:- Muscles receive signals from nerves**

27 Which connective tissue at a joint connects bone to bone and restricts excessive movement, preventing dislocation? 2 Nov 09:00 **:- Ligament**

28 What characteristic of epithelial tissues enables them to prevent water loss in the outer body covering? 2 Nov 09:00
:- Closely packed cells with minimal spaces

Human Physiology 12

29 Which part of the human brain is mainly responsible for thinking, reasoning and decision-making? 27 Oct 09:00 **:- Fore-brain**

30 What is the primary function of the cartilage discs between the vertebrae in the human spine? 27 Oct 09:00 **:- Act as cushions and allow flexibility**

31 Which structural feature enables arteries to withstand high blood pressure? 27 Oct 12:45
:- Thick, elastic walls

32 Which enzyme, present in the stomach, helps digest proteins? 27 Oct 16:30 **:- Pepsin**

33 How does lymph compare with blood plasma in protein content and colour? 27 Oct 16:30
:- Lymph has less protein than plasma and is colourless

34 Which process causes muscle cramps during sudden physical activity due to a lack of oxygen? 28 Oct 09:00 **:- Anaerobic respiration in muscles**

35 How does lymph return excess tissue fluid to circulation? 28 Oct 09:00
:- Lymph drains excess fluid from extracellular space back into the blood

36 How does the muscular tongue contribute to digestion in the mouth? 28 Oct 09:00
:- By mixing food with saliva and aiding in chewing

37 Which gland secretes the hormone responsible for regulating growth and development in children? 28 Oct 12:45 **:- Pituitary gland**

38 What is the path of an electrical impulse through a neuron? 28 Oct 16:30 **:- Dendrite to cell body to axon**

39 What is the correct anatomical pathway of urine out of the human body? 2 Nov 09:00
:- Kidney → Ureter → Urinary bladder → Urethra

40 What is the route of blood through arteries, capillaries and veins? 2 Nov 09:00
:- Heart → arteries → capillaries → veins → heart

Diversity & Classification 8

41 Which plant group has true roots, stems and leaves but no seeds? 27 Oct 09:00 **:- Pteridophyta**

42 Which part of the binomial name 'Homo sapiens' represents the genus? 27 Oct 09:00 **:- Homo**

43 Which taxonomic group consists of organisms that can interbreed and produce fertile offspring? 27 Oct 09:00 **:- Species**

44 What is a primary function of the vertebral column in vertebrates? 27 Oct 16:30
:- To protect the spinal cord of the nervous system

45 In 1969, which taxonomist developed the five kingdom model to classify living organisms? 28 Oct 09:00
:- Robert H. Whittaker

46 Why are gymnosperms better suited to dry environments than bryophytes?
1) They produce flowers
2) They need constant moisture
3) They have needle-like leaves
4) They lack true roots
28 Oct 12:45 **:- They have needle-like leaves**

47 Organisms growing on decaying wood in a moist forest lack chlorophyll and reproduce by spores. To which group do they belong? 28 Oct 16:30 **:- Fungi**

48 Why is the presence or absence of a notochord a significant criterion in animal classification? 2 Nov 09:00
:- It helps to distinguish chordates from non-chordates

> **NOTE**
> The Hindi paper's option says vertebrates and invertebrates; the English paper says chordates and non-chordates, the groups the notochord separates.

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Ecology & Environment 6

49 What happens when a non-biodegradable substance remains on earth for a longer period? 27 Oct 12:45
:- Causes pollution and harms the members of ecosystem

50 Why do non-biodegradable pesticides undergo biological magnification in food chains? 27 Oct 16:30
:- They accumulate in organisms and are not broken easily

51 What is the excessive input of nutrients such as nitrates and phosphates into a water body, causing algal bloom and depletion of dissolved oxygen, termed as? 28 Oct 09:00 **:- Eutrophication**

52 If pollution kills the microscopic algae of a coastal ecosystem, what is the most likely impact on the ecosystem's stability? 28 Oct 12:45
:- Reduced level of dissolved oxygen in marine water

53 Which type of water pollution results from excessive nitrates and phosphates stimulating aquatic plant overgrowth? 28 Oct 16:30 **:- Eutrophication**

54 Which combination of solutions should an awareness drive promote to best address the environmental impacts of disposables? 28 Oct 16:30
:- Promote reusable products and educate about waste segregation

Cell Biology 4

55 Which end products result from yeast fermentation? 27 Oct 09:00 **:- Ethanol and carbon dioxide**

56 How does mitosis differ from meiosis in the cells it produces? 28 Oct 16:30
:- Mitosis produces identical cells, while meiosis creates cells with genetic variation

57 What is the most likely consequence for a plant cell that loses all functional plastids? 28 Oct 16:30
:- The cell cannot synthesize food

58 What happens when a plant cell is placed in a solution with a higher solute concentration outside than inside the cell? 2 Nov 09:00
:- Water moves out, causing the cell content to shrink

Heredity & Evolution 3

59 If an insect population is exposed to a new pesticide, what is the most likely long-term outcome? 27 Oct 09:00
:- Resistant individuals survive and pass on their traits

60 How does genetic variation produced by meiosis help some individuals survive? 28 Oct 09:00
:- Meiotic variations provide traits better suited to new conditions

61 What leads to genetic variation among siblings? 28 Oct 09:00
:- The random assortment of chromosomes during meiosis

Plant Physiology 3

62 Which organisms can synthesize their own food using sunlight and chlorophyll? 27 Oct 12:45
:- Green plants

63 What is the role of cytokinins in plants? 28 Oct 12:45
:- They promote cell division

64 Which form of solar energy supports photosynthesis on Earth? 2 Nov 09:00 **:- Visible light**

Nutrition & Health 2

65 Which habit should a mother avoid after childbirth to protect her health and her baby's health? 27 Oct 09:00 **:- Consuming alcohol**

66 In which structure does the digestion of complex substances into simpler ones occur in Amoeba? 27 Oct 12:45 **:- Inside the food-vacuole**

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