CLASS VII

Date: 01-11-2026

Physics

Q.1 In series, voltages add: $V_{total} = V_1 + V_2 = 2V$. The total voltage doubles compared with one cell (assuming ideal cells).

Correct Answer: A

Q.2 Magnetic field strength of an electromagnet increases with:

(i) More turns of wire, (ii) Higher current

(iii) Presence of a soft iron core

Increasing current $\rightarrow$ stronger magnetic field.

Decreasing turns, removing the core, or disconnecting the battery all weaken it.

Correct Answer: B

Q.3 A valid controlled experiment changes only one variable (length) while keeping other factors (mass, release angle, etc.) constant. This isolates the effect of length on the time period.

Correct Answer: D

Q.4 Both are at the same room temperature. Metal has high thermal conductivity, so it draws heat from your hand rapidly, creating a sensation of cold. Wood is a poor conductor, so it feels less cold.

Correct Answer: C

Q.5 The book is in equilibrium under two forces: weight (gravity) downward and the normal reaction (support force) from the table upward. These are equal and opposite. Since the table is horizontal, even frictional force is absent.

Correct Answer: A

Q.6 Average speed = distance / time.

For the same distance, shorter time signifies greater speed. Vehicle A is faster than Vehicle B as it takes lesser time to cover the same distance.

Correct Answer: C

Q.7 Total distance=100+60=160 m

$$\text{Average speed}=\frac{160}{40}=4\ \text{m/s}$$

Correct Answer: C

Q.8 Displacement = change in position. After one full lap, the runner returns to the starting point → displacement = 0. Distance covered = circumference of a circle (non-zero).

Correct Answer: D

Q.9 During the day, land heats up faster than water (lower specific heat capacity). Warm air over land rises, creating low pressure and cooler air from the sea moves in to replace it → sea breeze.

Correct Answer: B

Q.10 Angle of incidence = 90° - angle made by the incident ray with the mirror

Angle of incidence = 90° - 50° = 40°.

Angle of incidence = angle of reflection = 40° (measured from the normal).

Angle between incident ray and reflected ray = 40°+40°=80°.

Correct Answer: C

Chemistry

Q.11 Hydrochloric, sulphuric and nitric acids are made in labs and factories from minerals, so they are mineral acids. Citric acid is found in lemon and orange, so it is not a mineral acid.

Correct Answer: B

Q.12 Silver is the least reactive of the four metals, so any of the other three strips can push silver out of its solution. That is why the silver jar reacts again and again.

Correct Answer: C

Q.13 The muslin cloth acts as a filter. It holds back the malai and lets the liquid milk pass through. In decantation we just pour off the liquid without using any cloth.

Correct Answer: A

Q.14 Y (2, 8, 7) has 7 electrons in its outer shell, so it is a non-metal (chlorine). Z (2, 8, 2) has only 2, so it is a metal (magnesium). X (2, 8) has a full outer shell, so it is a noble gas.

Correct Answer: D

Q.15 Iron is more reactive than copper, so it takes the place of copper in the solution. A new substance (iron sulphate) is formed, and that is why the blue colour turns green.

Correct Answer: A

Q.16 Solid water is the ice in ice caps (q), and liquid water is the water in oceans (p). Gas is the water vapour in the atmosphere (r), and water harvesting matches rain water harvesting (s). So A-q, B-p, C-r, D-s.

Correct Answer: B

Q.17 Soap solution is basic in nature. Phenolphthalein turns pink in a base and stays colourless in an acid.

Correct Answer: A

Q.18 A heated iron ball only expands, and no new substance forms. Seeds soaked in water and germination occur, which is a chemical change.

Correct Answer: C

Q.19 When the water evaporates, the salt comes back exactly as it was. Nothing new was made, so it is a physical change.

Correct Answer: B

Q.20 Antimony and arsenic have some properties of metals and some of non-metals. Such elements are called metalloids, and this in-between nature makes them useful in semiconductors

Correct Answer: D

Mathematics

Q.21 Cuboid has 8 vertices

Correct Answer: B

Q.22 $\Rightarrow 6 \times 4 = 24$ cm

Correct Answer: C

Q.23 $\Rightarrow$ Six hundredths $= \frac{6}{100} = 0.06$

Correct Answer: B

Q.24 $\Rightarrow$ LCM(2,3,4,5,6)=60;

smallest 4-digit multiple = 1020.

Correct Answer: A

Q.25 $\Rightarrow 5 - 2 = 3$ unshaded

Fraction = 3/5

Correct Answer: B

Q.26 1 kg costs Rs 160.

So, 43 kg will cost:

43×160 = Rs 6880

Correct Answer: B

Q.27 $\Rightarrow 40 \times 40 = 1600$ sq cm

Correct Answer: C

Q.28 Let the first angle be x

Then, second angle = 2x

Third angle = x + 20

According to angle sum property of a triangle

$= x+2x+(x+20)=180°$

$4x = 160°$

$x=40°$; largest = $2x \Rightarrow 80°$.

Correct Answer: B

Q.29 $\Rightarrow 5.5 \times 1000$ ml = 5500 ml

Correct Answer: B

Q.30 Total ratio parts = 2 + 3 + 5 = 10

$\Rightarrow$ 1 part = 1200 ÷ 10 = Rs 120

$\Rightarrow$ C - A = (5 - 2) parts = 3 parts = 3×120 = Rs 360

Correct Answer: C

Q.31 $\Rightarrow 60 \div 12 = 5$

Correct Answer: A

Q.32 $\Rightarrow 2(15+5) = 40$

Correct Answer: B

Q.33 Let original number = 100

$\Rightarrow$ After 20% increase: $100 \times 1.2 = 120$

$\Rightarrow$ After 20% decrease: $120 \times 0.8 = 96$

$\Rightarrow$ Net change = 100 $\rightarrow$ 96 = 4% decrease

Correct Answer: C

Q.34 $\Rightarrow 0.4 + 0.09 = 0.49$

Correct Answer: B

Q.35 $\Rightarrow$ Side = 8, perimeter = $4 \times 8 = 32$

Correct Answer: C

Q.36 Work is constant $\rightarrow$ workers $\times$ days = constant

$\Rightarrow 12 \times 10 = 15 \times x$

$$\Rightarrow x = \frac{120}{15} = 8$$

Correct Answer: B

Q.37 Total surface area of cube = $6a^2$

$6 \times 4^2 = 6 \times 16 \Rightarrow 96\ cm^2$

Correct Answer: B

Q.38

$$\Rightarrow \text{Mean} = \frac{3+6+9+12}{4} = \frac{30}{4} = 7.5$$

Correct Answer: B

Q.39 $\Rightarrow 7.50 \times 28 = 210$

Correct Answer: A

Q.40 $\Rightarrow 4.25 = 4 + 1/4$

Correct Answer: B

Q.41 (a) 4 cm $\times$ 5 cm = 20 cm

(b) 2 (6 + 4) = 20 cm

(c) 7 cm $\times$ 3 cm = 21 cm

(d) 3 cm $\times$ 5 cm = 15 cm (Smallest)

Correct Answer: D

Q.42 East $\rightarrow$ South $\rightarrow$ West $\rightarrow$ North = 3 right-angle turns (each 90° clockwise)

Correct Answer: C

Q.43 Circumference = $2\pi r = 44$

$$2\times\frac{22}{7}\times r=44 \Rightarrow r=7\text{cm}$$

$$\text{Area} = \pi r^2=\frac{22}{7}\times 7^2=154\ \text{cm}^2$$

Correct Answer: A

Q.44 1234321 — pattern

Correct Answer: A

Q.45 $\Rightarrow \frac{128}{4} = 32$

Correct Answer: C

Q.46 Total = 100 sections

blue = 40 sections

White = 15 sections

Grey = 100 - (40 + 15) = 45

$\therefore$ Decimal representation of grey part $= \frac{45}{100} = 0.45$

Correct Answer: A

Q.47 $\Rightarrow$ length = 12,

Perimeter of rectangle = 2 (l + b)

$\Rightarrow 40 = 2\ (l + 8)$

$\Rightarrow 20 = l + 8$

$\Rightarrow l = 12$

Area = 12 cm × 8 cm

= 96 cm^2

Correct Answer: A

Q.48 Divide 1056 by 23:

$23\times45=1035,\ 23\times46=1058$

Next multiple of 23 after 1056 is 1058.

1058 - 1056 = 2

Correct Answer: A

Q.49 $\Rightarrow 12\times3 = 36\ \text{cm}^2$

Correct Answer: B

Q.50 $\Rightarrow$ 2000 - 650 - 850 = 500 mm

Correct Answer: C

Biology

Q.51 The liver produces bile juice, but it is stored and concentrated in the gallbladder until needed for fat digestion.

Correct Answer: B

Q.52 Stomata are microscopic pores on leaf surfaces that open and close to regulate gas exchange and water loss.

Correct Answer: C

Q.53 Arteries have thick walls to carry oxygen-rich blood under high pressure away from the heart to the body.

Correct Answer: C

Q.54 Spirogyra is a filamentous alga that matures and simply breaks into pieces, with each fragment growing into a new plant.

Correct Answer: C

Q.55 Autogamy is the most specific type of self-pollination where pollen moves within the exact same flower.

Correct Answer: A

Q.56 After fertilization, the ovary grows into the fruit while the ovules mature into the seeds inside.

Correct Answer: B

Q.57 Aerobic respiration breaks down glucose completely into carbon dioxide and water. This complete breakdown extracts maximum energy, making both statements true and directly linked.

Correct Answer: A

Q.58 Arteries carry oxygen-rich blood away from the heart at high pressure. To withstand this high pressure, they have thick, muscular, and elastic walls. Valves are not needed because the high pressure keeps the blood flowing forward in one direction.

Correct Answer: A

Q.59 Xylem only moves water and minerals upward from the roots (unidirectional), while phloem moves food both upward and downward to all parts of the plant (multidirectional). Phloem loading and transport actively consume metabolic energy (ATP).

Correct Answer: A

Q.60 Amoeba uses temporary, finger-like extensions of its cell membrane called pseudopodia (false feet) to encircle and engulf food particles.

Correct Answer: B

Mental Ability

Q.61 5 squares can fold into an open cube.

Correct Answer: C

Q.62 4:00 $\rightarrow$ hour at 4, minute at 12 $\rightarrow$ 120° = obtuse.

Correct Answer: C

Q.63 cubes: $1^3 - 1 = 0$

$2^3 + 1 = 8 + 1 = 9$

$3^3 - 1 = 27 - 1 = 26$

$4^3 + 1 = 64 + 1 = 65$

$5^3 - 1 = 125 - 1 = 124$

Correct Answer: C

Q.64 vertical mirror on right gives symmetric 'A'

Correct Answer: B

Q.65

SMART	SHINE
S + 1 = T	S + 1 = T
M - 1 = L	H - 1 = G
A + 1 = B	I + 1 = J
R - 1 = Q	N - 1 = M
T + 1 = U	E + 1 = F
UQBLT	FMJGT

Correct Answer: B

Q.66 Others are 3D shapes

Correct Answer: D

Q.67 Net +2 each attempt: 4, 6, 8 → reaches 8 on 3rd attempt

Correct Answer: A

Q.68 West → North-East

Correct Answer: A

Q.69 D is father of B; A is son of B → grandson of D.

Correct Answer: B

Q.70 Opposite pairs: 6-1, 5-2, so 3-4

Correct Answer: B

Q.71 $1^2 + 2^2 + 3^2 + 4^2 + 5^2 = 1 + 4 + 9 + 16 + 25 = 55$

Correct Answer: B

Q.72 4 in row + 2 lids on opposite sides

Correct Answer: C

Q.73 → 9 + 9 - 1 = 17

Correct Answer: B

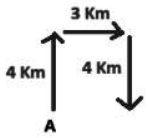
Q.74 The man starts from Point A.

He moves 4 km North.

He turns right → 3 km East.

He turns right again → 4 km South.

The 4 km North and 4 km South movements are equal and opposite, so they cancel each other.



Therefore, the man is 3 km East of his starting point.

Shortest distance from the starting point = 3 km.

Correct Answer: D

Q.75 4 — folded twice → 4 holes

Correct Answer: C