

Read all the instructions carefully before answering your questions.
You are not allowed to leave the exam hall before the end of the test.

GENERAL INSTRUCTIONS

- This booklet is your question paper. Answers are to be marked in the provided OMR sheet.
- This question paper contains FIVE sections.
 - Section- I is **MATHEMATICS**,
 - Section - II is **PHYSICS**,
 - Section - III is **CHEMISTRY**,
 - Section–IV IS **BIOLOGY**,
 - Section – V is **APTITUDE**.
- There are a total of 100 questions.
- All questions are **Multiple Choice questions with single answer correct**.
- Each question carries **+4 marks** for correct answer, **No negative marks**

FILLING OMR SHEET

Ensure all details in the OMR are filled before you start marking your answers.

On the OMR sheet, darken the appropriate bubble with **BALL POINT PEN ONLY**

Name of the Candidate :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Roll Number :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Date of Examination :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Centre :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Useful Data

PHYSICS

Acceleration due to gravity	: $g = 10 \text{ m/s}^2$
Planck constant	: $h = 6.6 \times 10^{-34} \text{ J-s}$
Charge of electron	: $e = 1.6 \times 10^{-19} \text{ C}$
Mass of electron	: $m_e = 9.1 \times 10^{-31} \text{ kg}$
Permittivity of free space	: $\epsilon_0 = 8.85 \times 10^{-12} \text{ C}^2 / \text{N-m}^2$
Density of water	: $\rho_{\text{water}} = 10^3 \text{ kg/m}^3$
Atmospheric pressure	: $P_a = 10^5 \text{ N/m}^2$
Gas constant:	$R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$

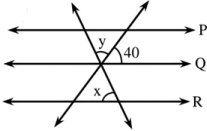
CHEMISTRY

Gas Constant R	=	$8.314 \text{ J K}^{-1} \text{ mol}^{-1}$
	=	$0.0821 \text{ Lit atm K}^{-1} \text{ mol}^{-1}$
	=	$1.987 \approx 2 \text{ Cal K}^{-1} \text{ mol}^{-1}$
Avogadro's number N_a	=	6.023×10^{23}
Planck's constant h	=	$6.625 \times 10^{-34} \text{ J.s}$
	=	$6.625 \times 10^{-27} \text{ erg.s}$
1 Faraday	=	96500 coulomb
1 calorie	=	4.2 joule
1 amu	=	$1.66 \times 10^{-27} \text{ kg}$
1 eV	=	$1.6 \times 10^{-19} \text{ J}$

Atomic No: H = 1, He = 2, Li = 3, Be = 4, B = 5, C = 6, N = 7, O = 8, F = 9, Ne = 10, Na = 11, Mg = 12, Si = 14, Al = 13, P = 15, S = 16, Cl = 17, Ar = 18, K = 19, Ca = 20, Cr = 24, Mn = 25, Fe = 26, Co = 27, Ni = 28, Cu = 29, Zn = 30, As = 33, Br = 35, Ag = 47, Sn = 50, I = 53, Xe = 54, Ba = 56, Pb = 82, U = 92.

Atomic masses: H = 1, He = 4, Li = 7, Be = 9, B = 11, C = 12, N = 14, O = 16, F = 19, Na = 23, Mg = 24, Si = 28, Al = 27, P = 31, S = 32, Cl = 35.5, K = 39, Ca = 40, Cr = 52, Mn = 55, Fe = 56, Co = 59, Ni = 58.7, Cu = 63.5, Zn = 65.4, As = 75, Br = 80, Ag = 108, Sn = 118.7, I = 127, Xe = 131, Ba = 137, Pb = 207, U = 238.

Section – I – MATHEMATICS

- If $x = -\frac{3}{7}$ and $y = \frac{4}{9}$, what is the multiplicative inverse of the additive inverse of $(x + y)$?
 (a) 63 (b) $-\frac{1}{63}$ (c) -63 (d) $\frac{1}{63}$
- What is the value of $\frac{3}{5} \times \left(-\frac{2}{7}\right) - \frac{1}{14} - \frac{3}{5} \times \frac{5}{7}$?
 (a) $-\frac{3}{7}$ (b) $\frac{47}{70}$ (c) $-\frac{3}{5}$ (d) $-\frac{47}{70}$
- If $\left(\frac{p}{q}\right) = \left(\frac{2}{3}\right)^3 \div \left(\frac{9}{4}\right)^{-2}$, then what is the value of $\left(\frac{p}{q}\right)^{-1}$?
 (a) $\frac{2}{3}$ (b) $\frac{3}{2}$ (c) $\frac{4}{9}$ (d) $\frac{9}{4}$
- What is the value of x if $\left(\frac{2}{5}\right)^{2x-3} \times \left(\frac{5}{2}\right)^{x-1} = \frac{8}{125}$?
 (a) 0 (b) 1 (c) 5 (d) 2
- Two parallel lines are intersected by a transversal. The ratio of two interior angles on the same side of the transversal is 2 : 3. What is the measure of the smaller angle?
 (a) 108° (b) 72° (c) 36° (d) 144°
- Refer the figure below. Which of the following is true? (Lines $P \parallel Q \parallel R$)


 (a) $x = y = 140^\circ$ (b) $x + y = 40^\circ$ (c) $x + y = 140^\circ$ (d) $x - y = 40^\circ$
- The mean of 10 observations is 15. If each observation in the data set is multiplied by 3 and then increased by 2, what will be the new mean of the observations?
 (a) 45 (b) 52 (c) 47 (d) 49
- The numbers $x - 2$, $x + 2$, $x + 4$, and $x + 6$ are arranged in ascending order. If the median of these observations is 17, find the value of x .
 (a) 13 (b) 15 (c) 17 (d) 191
- If AB is the perpendicular bisector of CD, then –
 (a) AB is bisected by the line CD (b) CD is bisected by the line AB
 (c) AB and CD both bisect each other (d) None of these
- Which of the following statements is true?
 (a) Two adjacent angles can be complementary
 (b) Two adjacent angles cannot be supplementary
 (c) An acute angle cannot be adjacent to an obtuse angle
 (d) Two right angles cannot be adjacent angles

Section – II – PHYSICS

11. Three electric cells, each with a potential difference of 1.5 V, are connected to form a battery. Which of the following statements describes the correct way to connect the cells so that the total potential difference across the battery is 4.5 V?
 - (a) The positive terminal of the first cell connected to the positive terminal of the second cell, and negative to negative.
 - (b) The positive terminal of each cell connected to the negative terminal of the next cell in a single continuous line.
 - (c) All positive terminals joined together to one point, and all negative terminals joined together to another point.
 - (d) The negative terminal of the first cell connected directly to the negative terminal of the third cell.
12. Why do coastal areas experience a cool breeze coming from the sea towards the land during the afternoon?
 - (a) Land heats up faster than water, causing warm air over land to rise and cool air from the sea to rush in.
 - (b) Water heats up faster than land, causing warm air over the sea to rise and land air to rush out.
 - (c) Heat from the Sun reaches the sea purely by conduction, creating higher pressure over the land.
 - (d) Radiation reflects completely off the sea surface, lowering the atmospheric temperature directly above the land.
13. An electrical circuit consists of a switch, a bulb, and two identical cells. A student connects four different objects (I, II, III, IV) one by one into a gap in the circuit to test their electrical conductivity:

Object I: A dry wooden ruler

Object II: An iron nail coated with plastic paint

Object III: The graphite core of a pencil sharpened at both ends

Object IV: A pure copper wire

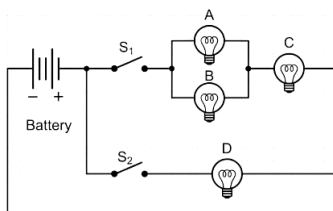
In which case(s) will the bulb glow?

 - (a) Only IV
 - (b) Only III and IV
 - (c) Only II, III, and IV
 - (d) Objects I, III, and IV
14. Four identical metal rods made of Copper, Iron, Aluminium, and Brass have small wax beads stuck to one of their ends using equal amounts of wax. The opposite ends of all four rods are simultaneously placed in a container of boiling water at 100°C. The wax bead on the Copper rod melts first, followed by Aluminium, then Brass, and finally Iron. Which of the following inferences is correct?
 - (a) Iron is the best thermal conductor among the four metals.
 - (b) Heat transfer through the metal rods takes place mainly through convection.
 - (c) Copper transfers heat via conduction faster than Aluminium, Brass, and Iron.
 - (d) The melting point of wax decreases when placed on a copper surface.
15. A circuit contains three identical bulbs B_1 , B_2 , and B_3 connected in series with a closed switch and a battery. Suddenly, bulb B_2 burns out (its filament breaks). What will happen to bulbs B_1 and B_3 ?
 - (a) Both B_1 and B_3 will continue to glow with the same brightness.
 - (b) Both B_1 and B_3 will glow brighter because current bypasses B_2 .
 - (c) Both B_1 and B_3 will immediately stop glowing.
 - (d) B_1 will remain lit, but B_3 will turn off.

16. Two identical containers **X** and **Y** are filled with equal amounts of hot water at **80°C**. Container **X** is painted glossy black on the outside, while Container **Y** is painted shiny silver on the outside. Both containers are left in a room kept at a constant temperature of **25°C**. After 15 minutes, their temperatures **T_X** and **T_Y** are measured. Which statement correctly describes the outcome and reason?
- $T_X = T_Y$, because thermal conduction to the surrounding air is identical.
 - $T_X < T_Y$, because dark surfaces are better thermal radiation emitters than shiny surfaces.
 - $T_X > T_Y$, because dark surfaces absorb cold radiation from the surroundings.
 - $T_X < T_Y$, because silver surfaces conduct heat faster than black surfaces.
17. Consider a simple torch circuit containing a switch, connecting wires, and two cells. Which of the following modifications will definitely increase the brightness of the glowing bulb without changing the bulb itself?
- Reversing the connection of one of the two cells in the battery.
 - Adding a third identical cell connected in series with the correct polarity.
 - Replacing the copper connecting wires with thicker rubber-insulated wooden strips.
 - Opening the switch so the current circulates faster.
18. Why are liquid heating elements (like electric water heating rods) placed near the bottom of a container to heat water efficiently, whereas air conditioner cooling units are mounted high near the ceiling of a room?
- Hot water is denser and sinks; cold air is lighter and rises.
 - Liquids transfer heat purely by conduction, while gases transfer heat by radiation.
 - Heated fluids expand, become less dense, and rise; cooled air contracts, becomes denser, and sinks.
 - To prevent electrical short circuits caused by rising water vapor.
19. A student designs a circuit using four identical bulbs (**A**, **B**, **C**, and **D**), a battery, and two switches (**S₁** and **S₂**) as shown in the schematic diagram below:

When **S₁** is closed and **S₂** is open, current flows through the combined parallel branch of **A** and **B**, then in series through **C**.

When **S₁** is open and **S₂** is closed, current bypasses **A**, **B**, and **C**, powering only **D**. Assuming all four bulbs have equal resistance, select the INCORRECT statement:



- If both **S₁** and **S₂** are closed simultaneously, all four bulbs will glow.
- With **S₁** closed and **S₂** open, if Bulb **A** 's filament burns out, Bulb **B** and Bulb **C** will remain glowing.
- With **S₁** closed and **S₂** open, Bulb **C** glows brighter than Bulb **A**.
- If Bulb **C** 's filament burns out while **S₁** is closed and **S₂** is open, Bulb **A** will glow brighter to compensate.

RISE SCHOLARSHIP CUM ADMISSION TEST – SAMPLE PAPER

Class – 7th to 8th



20. Three identical insulated beakers **P**, **Q**, and **R** contain equal masses of water at temperatures 20°C, 40°C, and 80°C respectively.
- Step 1: Beaker **P**(20°C) and Beaker **Q**(40°C) are mixed together completely in an insulated container until thermal equilibrium is reached at temperature **T₁**.
- Step 2: Half of this resulting mixture (mass equal to original beaker mass **m**) at temperature **T₁** is removed and mixed into Beaker **R**(80 °C) to form a final mixture at temperature **T₂**.
- Assuming no heat loss to the surroundings, what is the ratio of final equilibrium temperatures **T₁/T₂** ?
- (a) 3 / 7 (b) ½ (c) 3 / 5 (d) 6 / 11

Section – III – CHEMISTRY

21. Determine which one of the following solution mixtures and the colour change associated with litmus paper is correctly matched.
- (a) Addition of lemon juice to soap solution → Blue litmus paper remains blue
- (b) Addition of vinegar in baking soda solution → Red litmus turns blue
- (c) Addition of tamarind water in vinegar solution → Red litmus remains red
- (d) Addition of salt solution to lime water → Blue litmus turns red
22. Explain why bubbles occur when vinegar spills on marble floor but not when soap solutions spills.
- (a) Marble is basic in nature and leads to neutralisation reaction with vinegar releasing gas bubbles.
- (b) Vinegar reacts with marble to release CO₂ gas bubbles
- (c) Vinegar reacts with marble to release NO₂ gas bubbles
- (d) Vinegar is base and marble is acid that react to release gas
23. What could be the reason for the 'Iron pillar of Delhi' doesn't Rust.
- (a) Iron might be provided with protective layer of zinc metal.
- (b) Iron might be provided with protective layer of copper metal.
- (c) Iron pillar has pores that supply air and prevent rust.
- (d) Iron is blended with gold to be rust resistant.
24. Which of the following object or material is poor conductor of electricity.
- (a) Aluminium foil (b) Powder of sulphur
- (c) Ribbon of Magnesium (d) Silver spoon
25. Extremely durable and tensile wire that is used in suspension bridges and in cranes to lift heavy object is made up of which of the following combination of metal and non-metal.
- (a) Iron + Carbon (b) Iron + Nickel + Carbon
- (c) Iron + Chromium + Silicon (d) Iron + Zinc + Sulphur
26. Which of the following plants produces different coloured flowers depending acidic/basic nature of soil.
- (a) Rose, acidic soil – blue flowers basic soil – Red flower
- (b) Turmeric, acidic soil – blue flowers basic soil – Red flower
- (c) Hydrangea, acidic soil – Red flower and basic soil – Blue flower
- (d) Hydrangea acidic soil – blue flower – basic soil – Red flower
27. Find odd one out when it comes to application as acid-base indicators.
- (a) Potato tuberose (b) Purple cabbage
- (c) Indian blackberry (d) Red hibiscus

28. Find incorrect pair of edible substance and acid present.

- | | |
|---------------------------|----------------------------|
| (a) Lemon → Citric acid | (b) Amla → Ascorbic acid |
| (c) Mango → Tartaric acid | (d) Tamarind → Oxalic acid |

29. Find incorrect statement about the metals.

- | | |
|--|--------------------------------------|
| (a) Sodium can be act with a knife | (b) All metals are ductile in nature |
| (c) Silver is more conducting compared to iron | (d) Copper shows green rust |

30. Identify correct statement about the non-metal.

- | | |
|--|---|
| (a) Phosphorus is stored in water | (b) Sulphur doesn't react when placed in water |
| (c) Bleaching powder, uses iodine to clean water | (d) Iodine is used in manufacturing fertilisers |

Section – IV – Biology

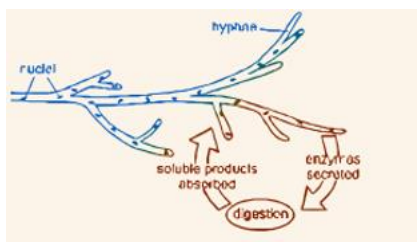
31. Which of the following initiates the processing of food?

- | | |
|-----------------------------|--|
| (a) Detoxification by liver | (b) Absorption by intestine |
| (c) Chewing by teeth | (d) Carbohydrate digestion by salivary amylase |

32. Hepatocytes are related to which of the following organs?

- | | | | |
|---------------|-------------|--------------|-----------|
| (a) Intestine | (b) Stomach | (c) Pancreas | (d) Liver |
|---------------|-------------|--------------|-----------|

33. Identify the given image and select the correct option which indicates the mode of nutrition used by the given organism.



- | | |
|----------------------------|---------------------------|
| (a) Saprotrophic nutrition | (b) Autotrophic nutrition |
| (c) Symbiotic nutrition | (d) Parasitic nutrition |

34. Read the given statements and select the correct option.

- (i) Salivary amylase breaks down starch into Maltose & Dextrin.
 (ii) Pancreas secretes enzymes that breaks down remainder of starch to maltose, which is further digested to glucose.
- (a) (i) & (ii) are true, (ii) is explanation of (i)
 (b) Only (i) is true
 (c) (i) & (ii) are true, both are independent statements
 (d) All of the above

35. Given below is the list of different organs of digestive system along with their functions in random order. Select an option which has the correct order.

- Absorption of nutrients from digested food in small intestine
- Breakdown of carbohydrates by salivary amylase in mouth
- Acidic hydrolysis of complex molecules in stomach
- Movement of food in oesophagus in a wave like motion called 'peristalsis' to stomach

- | | | | |
|----------------|----------------|----------------|----------------|
| (a) 2, 4, 3, 1 | (b) 4, 2, 1, 3 | (c) 1, 2, 3, 4 | (d) 3, 2, 4, 1 |
|----------------|----------------|----------------|----------------|

RISE SCHOLARSHIP CUM ADMISSION TEST – SAMPLE PAPER

Class – 7th to 8th



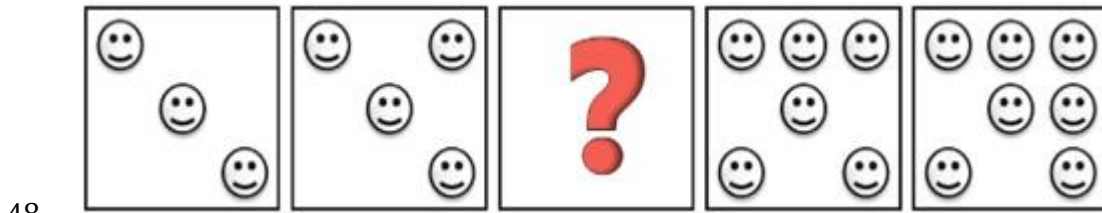
36. Nitin performed an experiment, he took a slice of bread & kept it outside the fridge under normal conditions, after 2 days he found a black-brown, cottony thread like moulds on it. Which organism can it mostly like be:
- (a) Mushroom (b) Rhizopus (c) All of these (d) None of these
37. It is proved that the chemical fertilizers are harmful. So, as an alternate to this problem which of the following options can be used to increase the fertility of farmlands?
- (a) Grow eucalyptus in the field
(b) Grow pea plants in the field
(c) Question does not provide sufficient information or is vague
(d) All of the above
38. Which of the following statements is true about croton plants?
- (a) Croton plants are parasites
(b) Croton plants do not contain chlorophyll
(c) Croton plants are dark red in colour. Hence, they depend on other plants for food
(d) Croton plants have chlorophyll but it is hidden by dark red colour pigments
39. Divakar is suffering from anaemia. He should increase the intake of which of the following food items in his diet?
- (a) Dates (b) Green leafy vegetables
(c) Dry fruits (d) All of the above
40. Insectivorous plants grow in soil that deficient mostly in-
- (a) nitrogen (b) potassium (c) water (d) oxygen

Section – V – Aptitude

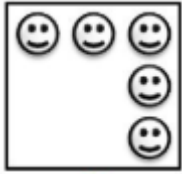
41. What is 15% of 200?
- (a) 20 (b) 30 (c) 40 (d) 50
42. If CAT is coded as DBU, how is DOG coded?
- (a) EPH (b) FPI (c) EQH (d) EPG
43. If RED is 27, what is the value of CAT? (Using standard A = 1, B = 2 ...)
- (a) 24 (b) 25 (c) 26 (d) 27
44. A is brother of B. C is father of A. D is brother of E. E is the daughter of B. Who is the uncle of D?
- (a) E (b) B (c) C (d) A
45. What is the mirror image of a clock showing 10 : 15?
- (a) 1 : 45 (b) 2 : 45 (c) 1 : 5 (d) 2 : 15
46. Find the next number: 2, 3, 5, 8, 12, ?
- (a) 15 (b) 16 (c) 17 (d) 18
47. Find the next number: 8, 27, 64, 125, ?
- (a) 216 (b) 225 (c) 243 (d) 256

RISE SCHOLARSHIP CUM ADMISSION TEST – SAMPLE PAPER

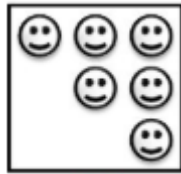
Class – 7th to 8th



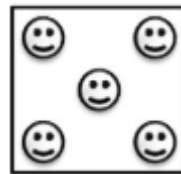
48.



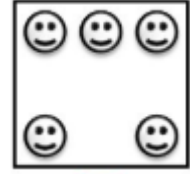
(a)



(b)



(c)



(d)

49. A family has 6 members, P, Q, R, X, Y, Z. Q is the son of R but R is not mother of Q. P and R are married. Y is brother of R. X is daughter of P. Z is brother of P. How many female members are there?

(a) 1

(b) 2

(c) 3

(d) 4

50. Find the next number: 5, 16, 51, 158, ?

(a) 481

(b) 475

(c) 483

(d) 488

ANSWER KEY

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
C	D	A	C	B	C	C	B	B	A
11	12	13	14	15	16	17	18	19	20
B	A	B	C	C	B	B	C	D	D
21	22	23	24	25	26	27	28	29	30
C	B	A	B	A	D	A	D	B	A
31	32	33	34	35	36	37	38	39	40
C	D	A	C	B	B	B	D	D	A
41	42	43	44	45	46	47	48	49	50
B	A	A	D	A	C	A	C	B	A