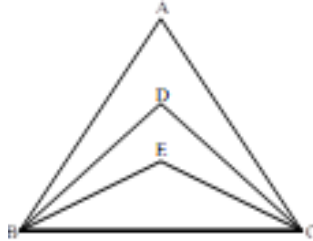


Section - I
MATHEMATICS

1. If $\frac{\sqrt[3]{2} \cdot \sqrt{3}}{\sqrt[6]{6}} = \sqrt[12]{k}$ Then k the value of k is
 (a) 144 (b) 196
 (c) 324 (d) 576
2. The value of $\frac{1}{1+\sqrt{2}} + \frac{2}{\sqrt{2}+2} + \frac{3}{2+\sqrt{7}} + \frac{4}{\sqrt{7}+\sqrt{11}} + \frac{5}{\sqrt{11}+4}$ is
 (a) 3 (b) 5
 (c) 21 (d) 19
3. If $(x+a)(x-3) = x^2 + 4x + b$ then the value of $a^2 - b$ is
 (a) 60 (b) 70
 (c) 80 (d) 28
4. If $(2+1)(2^2+1)(2^4+1)(2^8+1)(2^{16}+1) = 2^k - 1$ then the value of k is
 (a) 16 (b) 17
 (c) 64 (d) 32
5. If $(a^2 + b^2)^3 = (a^3 + b^3)^2$ then the value of $\frac{a}{b} + \frac{b}{a}$ is
 (a) $\frac{3}{2}$ (b) $\frac{4}{3}$
 (c) $\frac{2}{3}$ (d) $\frac{3}{4}$
6. If $2^a = 3, 3^b = 5, 5^c = 8$ then the value of $a \cdot b \cdot c$ is
 (a) 3 (b) 4
 (c) 5 (d) 8
7. The number of digits in the expansion of the number $4^{30} \cdot 25^{25}$ is
 (a) 54 (b) 55
 (c) 80 (d) 62
8. If $a^p \cdot a^q \cdot a^r = a^{p+q+r}$ then $\frac{p+q}{pq-1} + \frac{q+r}{qr-1} + \frac{p+r}{pr-1}$ is
 (a) $p+q-r$ (b) $p-q+r$
 (c) pqr (d) 1
9. If $x + \frac{1}{2x} = 4$ then the value of $x^3 + \frac{1}{8x^3}$ is
 (a) 16 (b) 17
 (c) 64 (d) 58

10. In the figure below, ABC is a scalene triangle. BE, BD trisect $\angle ABC$, and CE, CD trisect $\angle BCA$ and $\angle BAC = 30^\circ$
Then $\angle BDC =$ ____

- (a) 60°
(b) 80°
(c) 100°
(d) 75°



Section - II PHYSICS

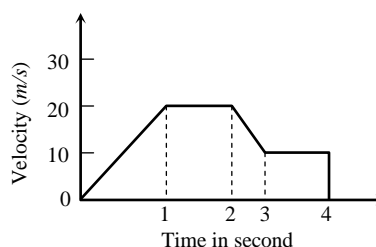
11. The acceleration due to the gravity at the centre of the earth is ____.
- (a) Infinite (b) Zero
(c) 9.8 ms^{-2} (d) None of these
12. The values of 'g' is ____.
- (a) constant everywhere on the earth
(b) greater at the poles of the earth as compared to equator
(c) constant everywhere in the universe
(d) greater at the equators of the earth compared to poles
13. Two balls, one of iron and other of aluminium experience same upthrust when dipped in water –
- (a) both have equal volume
(b) both have equal weight in air
(c) both have equal density
(d) nothing definite can be said
14. The height at which a body has one fourth of its weight, when it is on the surface of earth (radius of earth = R) is
- (a) at height R (b) at height $\frac{R}{2}$
(c) at height $\frac{R}{4}$ (d) at height 2R
15. An object is projected upwards with a velocity of 100 m/s . It will strike the ground after (approximately)
- (a) 10 sec (b) 20 sec (c) 15 sec (d) 5 sec
16. Work is the product of time and ____.
- (a) power (b) energy (c) force (d) acceleration
17. A body of mass 20 kg, slows down from 5ms^{-1} to 2ms^{-1} by a retarding force. The work done by the force is –
- (a) 50 J (b) 200 J (c) 300 J (d) 210 J

18. Rahul while driving to school, computes the average speed of his trip to be 20 kmh^{-1} . On his return trip along the same route, there is less traffic and average speed is 40 kmh^{-1} . The average speed of Rahul's round trip is:

- (a) 26.7 kmh^{-1} (b) 24.7 kmh^{-1} (c) 28.7 kmh^{-1} (d) 30 kmh^{-1}

19. The variation of velocity of a particle with time moving along a straight line is illustrated in the following figure. The distance travelled by the particle in four seconds is ____

- (a) 60 m
(b) 55 m
(c) 25 m
(d) 30 m



20. Impulse has same unit as that of –

- (a) force (b) pressure
(c) momentum (d) moment of force

Section – III

CHEMISTRY

21. On increasing the temp of copper from 20°C to 80°C , which of the following happens?

- (a) Position of copper atoms change, so potential energy increases
(b) Vibration of copper atoms increases so kinetic energy decreases
(c) Position of copper atoms change, so kinetic energy increases
(d) Vibration of copper atoms increases, so kinetic energy increases

22. 50ml of the below mentioned liquids, is poured on the floor. Which will occupy the maximum surface area in the floor?

- (a) Paint (b) Nail polish
(c) Water at 20°C (d) Water at 80°C

23. If there is another planet which has an atmospheric pressure half of that of the earth, then if we try to boil water on this planet, it will boil at

- (a) 100°C (b) less than 100°C
(c) more than 100°C (d) cannot be predicted

24. When a glass of water is placed in the freezer, the water start freezing to ice

- (a) from top to bottom (b) from bottom to top
(c) from outside towards inside (d) all at the same time, in no particular direction

25. 10 grams of H_2O is taken in the form of water, ice and steam. The one which has least density is

- (a) Ice (b) Water
(c) Steam (d) All have same density

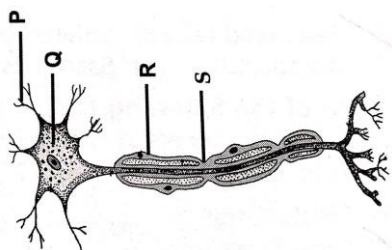
26. A solution is made by mixing 20g of sugar in 180grams of water. The concentration of this solution in mass by mass percentage will be

- (a) 10 (b) 100/9 (c) 1 (d) 9/100
27. 500gms of a solution was made by mixing two salts A and B in water. The mass % of A found to be 10% and b was found to be 20% in the solution. The mass of A and B in the solution in respectively
- (a) 50g, 100g (b) 10g, 20g (c) 45g, 90g (d) 49g, 96g
- 28.
- | Gas | Boiling point |
|-----|---------------|
| A | - 186 |
| B | - 183 |
| C | - 196 |
| D | - 172 |
- A mixture of gases A, B, C and D are compressed and then cooled to convert into a liquid. This liquid mixture is now warmed in a fractional distillation column. The gas obtained at the highest point in the column will be
- (a) A (b) B
(c) C (d) D
29. A mixture of salt, sand and sulphur is shaken with water and filtered through filter paper. The filtrate is evaporated to dryness in a China dish. What will be left in the dish after the evaporation?
- (a) Salt and sulphur (b) Salt only
(c) Sulphur only (d) All the three
30. 1 mole of oxygen atoms can represent
- (a) 6.02×10^{23} molecules of O_2 (b) 22.4 L of O_2 at STP
(c) 11.2 L of O_2 at STP (d) 12.04×10^{23} molecules of O_2

Section - IV

BIOLOGY

31. Which of the following are complex tissues?
- (a) Parenchyma and collenchyma (b) Collenchyma and sclerenchyma
(c) Xylem and phloem (d) Xylem and Parenchyma
32. Which of the following connects bones and muscles?
- (a) Tendons (b) Ligament (c) Collagen (d) Cartilage
33. Which of the following labelled parts in the figure given below receives nerve impulses from other neurons?

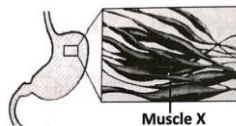


- (a) P (b) Q (c) R (d) S

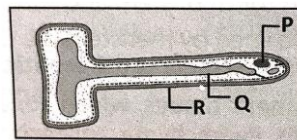
34. What are the functions of the stomata?

- (i) Take in water
- (ii) Trap sunlight
- (iii) Take in oxygen
- (iv) Give out CO₂
- (a) (i) and (ii)
- (b) (i) and (iii)
- (c) (iii) and (iv)
- (d) (ii), (iii) and (iv)

35. Which of these characteristics are true about 'X'?



- (a) Cylindrical, syncytial, unbranched and voluntary
 - (b) Cylindrical, striped, nucleated and voluntary
 - (c) Cylindrical, striped, branched and involuntary
 - (d) Spindle, unbranched, uni-nucleated and involuntary
36. Which of the following epithelial tissues lines the inner surface of the trachea?
- (a) Squamous
 - (b) Cuboidal
 - (c) Hyaline cartilage
 - (d) Ciliated
37. Which of the following substances is present in the cell walls of sclerenchyma?
- (a) Cellulose
 - (b) Pectin
 - (c) Lignin
 - (d) Hemicellulose
38. Identify the parts labelled P, Q and R in the diagram of a root hair cell, shown below.



- (a) P-Vacuole, Q-Nucleus, R-Cell wall.
 - (b) P-Protoplasm, Q-Nucleus, R-cell wall membrane
 - (c) P-Nucleus, Q-Vacuole, R-cell wall
 - (d) P-Mitochondria, Q-Nucleus, R-cell wall
39. Which part of the cell stores nutrients?
- (a) Mitochondria
 - (b) Vacuole
 - (c) Ribosome
 - (d) Oxysome
40. Ravi conducted an experiment to investigate what would happen when different cell organelles of a balsam plant leaf are removed. The results are recorded in the table given below.

Cell Parts	Out comes
P	The cell cannot function properly
Q	Iodine solution remains yellowish brown
R	The cell cannot control the entry and exit of the substances
S	The cell loses its regular shape

Identify cell parts P, Q, R and S.

RISE SCHOLARSHIP – ADMISSION TEST – SAMPLE PAPER

CLASS – 9th to 10th



- (a) Nucleus – Chlorophyll – Cell Wal – Cytoplasm
- (b) Cytoplasm – Chloroplast – Nucleus – Cell membrane
- (c) Nucleus – Chloroplast – Cell membrane – Cell wall
- (d) Nucleus – Chloroplast – Cell wall – Cell membrane

Section – V Aptitude

41. Find the missing number/letter.
1, 1, 4, 8, 9, 27, 16, ?
(a) 32 (b) 25 (c) 64 (d) 80
42. Find the missing number/letter.
7, 7, 14, 42, 168, ?
(a) 688 (b) 886 (c) 840 (d) 680
43. Find the missing number/letter.
R K, U N, X Q, A T, ?
(a) D V (b) E W (c) E V (d) D W
44. Find the missing number/letter.
I S K, L T N, P V Q, U Y T, ?
(a) Z C V (b) Z C W (c) A C W (d) B C W
45. Find the missing number/letter.
- c h c L s c h c - s - h - L s c - c L
(a) s L c c h (b) s L L c h (c) s c L c h (d) L c h c l
46. Find the odd-numeral pair.
(a) 2345 (b) 3456 (c) 5467 (d) 5678
47. Find the odd-numeral pair.
(a) 2468 (b) 2648 (c) 4826 (d) 6482
48. Find the odd-numeral pair.
(a) 256 (b) 625 (c) 1225 (d) 2401
49. Find the odd-numeral pair.
(a) 1112 (b) 4445 (c) 7778 (d) 6665
50. If in a certain language, ITNIETAM is the code for INTIMATE, which word has the code TREVNIETARBI?
(a) INVRETIBRATE (b) INVERTIBARTE (c) INVERTIBRETA (d) INVERTIBRATE

RISE SCHOLARSHIP – ADMISSION TEST – SAMPLE PAPER

CLASS – 9th to 10th



ANSWER KEY

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

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

Time Allotted: 2 Hrs

Maximum Marks: 400

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 :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roll Number :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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:	$Pa = 10^5 \text{ N/m}^2$
Gas constant:	$R = 8.314 \text{ J K}^{-1} \text{ mol}^{-1}$

CHEMISTRY

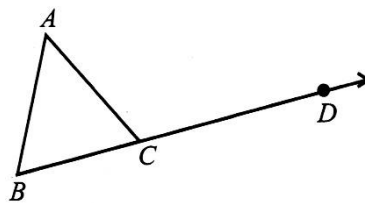
Gas Constant R	=	$8.314 \text{ J K}^{-1} \text{ mol}^{-1}$
	=	$0.0821 \text{ Lit atm K}^{-1} \text{ mol}^{-1}$
	=	$1.987 \approx 2 \text{ Cal K}^{-1} \text{ mol}^{-1}$
Avogadro's number N_a	=	6.023×10^{23}
Planck's constant h	=	$6.625 \times 10^{-34} \text{ J.s}$
	=	$6.625 \times 10^{-27} \text{ erg.s}$
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

- The value of 0.423 is
 (a) $\frac{423}{1000}$ (b) $\frac{423}{100}$ (c) $\frac{423}{990}$ (d) $\frac{419}{990}$
- If $2^{x-1} + 2^{x+1} = 320$, then the value of x is
 (a) 6 (b) 8 (c) 5 (d) 7
- Factors of polynomial $x^3 - 3x^2 - 10x + 24$ are
 (a) $(x - 2)(x + 3)(x - 4)$ (b) $(x + 2)(x + 3)(x + 4)$
 (c) $(x + 2)(x - 3)(x - 4)$ (d) $(x - 2)(x - 3)(x - 4)$
- Factors of $(a^2 + a)^2 + 4(a^2 + a) - 12$ are
 (a) $(a^2 + a + 6)(a + 2)(a - 1)$ (b) $(a^2 - a + 6)(a - 2)(a + 1)$
 (c) $(a^2 + a + 6)(a - 2)(a - 1)$ (d) $(a^2 + a + 6)(a + 2)(a + 1)$
- If the co-ordinates of the point P are (3, - 5), then the perpendicular distance of P from the y - axis
 (a) - 5 (b) 5 (c) 3 (d) - 3
- Which of the following equations represents a line parallel to x-axis?
 (a) $3x + 2 = 0$ (b) $3y + 2 = 0$ (c) $3x + 2y = 0$ (d) $3x - 2y = 0$
- If a linear equation has solutions (- 2, 2), (0, 0) and (2, - 2), then it is of the form
 (a) $y - x = 0$ (b) $x + y = 0$ (c) $- 2x + y = 0$ (d) $- x + 2y = 0$
- It is known that if $x + y = 10$, then $x + y + z = 10 + z$. The Euclid's axiom that illustrates this statement is:
 (a) first axiom (b) second axiom (c) third axiom (d) fourth axiom
- In the adjoining figure, if $\angle A = (3x + 2)^\circ$, $\angle B = (x - 3)^\circ$, $\angle ACD = 127^\circ$, then $\angle A =$



- (a) 24° (b) 32° (c) 96° (d) 98°
- If angles of a triangle are in the ratio 2 : 4 : 9, then the difference of the two smaller exterior angles of the triangle is -
 (a) 24° (b) 30° (c) 44° (d) 60°
 - The sides of an equilateral triangle are $(2a - b + 5)$, $(a + b)$ and $(2b - a + 2)$. What is the area of the triangle?
 (a) $\frac{\sqrt{3}}{4} \times a^2$ (b) $\frac{\sqrt{3}}{4} \times b^2$ (c) $\frac{\sqrt{3}}{4} \times 49$ (d) $\frac{\sqrt{3}}{4} \times 81$

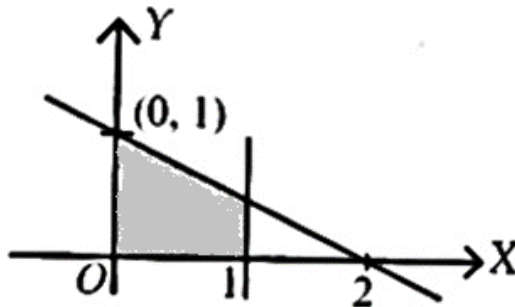
12. The value of $\sqrt{6+2\sqrt{3}} + 2\sqrt{2} + 2\sqrt{6} - \frac{1}{\sqrt{5-2\sqrt{6}}}$ is

- (a) 2 (b) -1 (c) $\sqrt{3} + \sqrt{2}$ (d) 1

13. If $x^4 + \frac{1}{x^4} = 47$, find the value of $x^3 + \frac{1}{x^3}$.

- (a) 7 (b) 18 (c) 6 (d) 12

14. In the rectangular coordinate system given below, the shaded region is bounded by four straight lines. Which of the following is not an equation of one of the boundary lines?

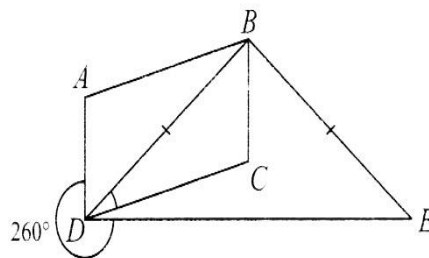


- (a) $x = 0$ (b) $x = 1$ (c) $x = y$ (d) None of these

15. In the equations $3x + 2y = 13xy$ and $4x - 5y = 2xy$, the values of x and y that satisfy the equations are

- (a) (2, 3) (b) (3, 2) (c) $\left(\frac{1}{2}, \frac{1}{3}\right)$ (d) $\left(\frac{1}{3}, \frac{1}{2}\right)$

16. In the given figure, ABCD is a rectangle. $BD = BE$, $\angle BED = 40^\circ$ and $\angle EDA = 260^\circ$. Find $\angle CDB$.



- (a) 25° (b) 30° (c) 40° (d) 45°

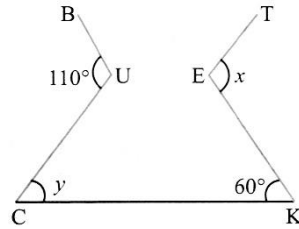
17. The value of $\frac{1}{1+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{5}} + \frac{1}{\sqrt{5}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{9}} + \dots + \frac{1}{\sqrt{23}+\sqrt{25}}$ is

- (a) -1 (b) 0 (c) 1 (d) 2

18. If polynomial $x^2 + ax + b$ leaves remainders 2 and 3 when divided by $(x - 1)$ and $(x - 2)$, respectively, then polynomial is

- (a) $x^2 + 3x - 2$ (b) $x^2 - 2x + 3$ (c) $x^2 + 2x - 3$ (d) $x^2 - 3x + 2$

19. In the given figure, if $BU \parallel EK$ and $TE \parallel UC$, then what are the values of x and y ?



- | | x | y |
|-----|-------------|-------------|
| (a) | 50° | 110° |
| (b) | 110° | 60° |
| (c) | 100° | 50° |
| (d) | 110° | 50° |

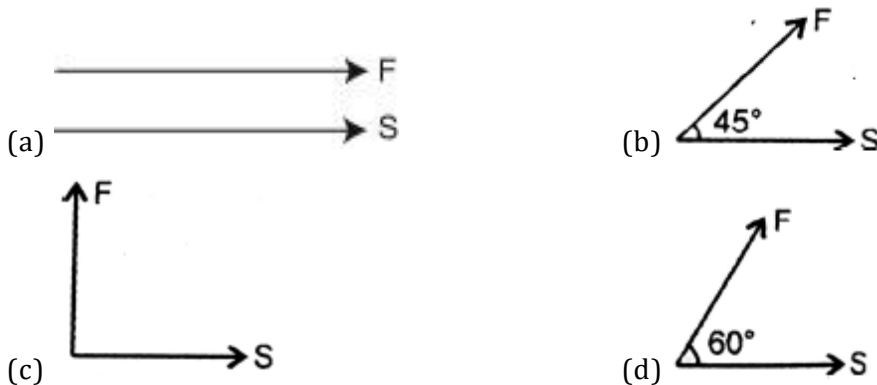
20. The percentage increase in the area of triangle, if its each side is quadrupled is equal to

- (a) 1500% (b) 1200% (c) 900% (d) 800%

Section - II

PHYSICS

21. In which of the following cases is work done maximum?



22. The force which brings down water from the hills to the sea is _____

- (a) electrical force (b) magnetic force (c) gravitational force (d) frictional force

23. A 20 kg block is connected to a 30 kg block. A force of 50 N pulls the blocks to the right as shown in figure.



Find the magnitude of acceleration 30 kg block?

- (a) 0.5 ms^{-2} (b) 1 ms^{-2} (c) 2 ms^{-2} (d) 5 ms^{-2}

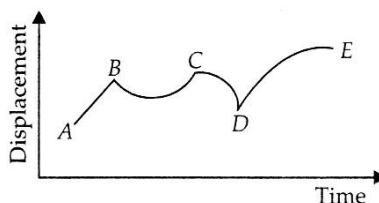
24. A player transfers a momentum of 12 kg m/s to a ball of mass 400 g which is at rest. Find the work done on the ball.

- (a) 180 J (b) 345 J (c) 400 J (d) 427 J

25. An object of mass m is moving with velocity v . What is the velocity of the object so that its kinetic energy becomes 4 times its original value?

- (a) $\frac{v}{2}$ (b) $2v$ (c) $\frac{v}{4}$ (d) $4v$

26. The value of acceleration due to gravity (g) on the surface of the moon is
 (a) 9.8 cm s^{-2} (b) 9.8 m s^{-2} (c) 2.5 cm s^{-2} (d) 1.6 m s^{-2}
27. Two objects attract each other by a force F . If masses of both the objects are doubled keeping distance between them same, the force between these objects will be
 (a) $\frac{F}{2}$ (b) F (c) $2F$ (d) $4F$
28. A sealed tin of liquid of 500 g has volume of 250 cm^3 . Density of tin is
 (a) 1 g/cm^3 (b) 2 g/cm^3 (c) 2.3 g/cm^3 (d) 1.33 g/cm^3
29. A planet of volume V and mass m has gravitational acceleration g on its surface. If it expands to 8 times its original volume, what will be the acceleration due to gravity?
 (a) $4g$ (b) $2g$ (c) $g/4$ (d) $g/8$
30. Two bodies of masses 1 kg and 2 kg are separated by a distance of 1 m on the surface of the earth, then the gravitational force between these two bodies is
 (a) $1 \times 6.673 \times 10^{-11} \text{ N}$ (b) $2 \times 6.673 \times 10^{-11} \text{ N}$ (c) $3 \times 6.673 \times 10^{-11} \text{ N}$ (d) $4 \times 6.673 \times 10^{-11} \text{ N}$
31. Momentum of an object is doubled if
 (a) its mass is doubled and velocity is halved
 (b) its mass remains the same and its velocity is halved
 (c) its velocity is doubled but mass remains the same
 (d) both mass and velocity are doubled
32. The following question has two statements: One labelled as Assertion (A) and the other labelled as Reason (R) Answer the questions using the code given below:
 (A) If both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
 (B) If both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
 (C) If Assertion (A) is true but Reason (R) is false.
 (D) If Assertion (A) is false but Reason (R) is true.
 Assertion (A): A rocket moves forward by pushing the surrounding air backwards.
 Reason (R): Rocket derives the force to move forward according to Newton's third law of motion.
- (a) D (b) C (c) B (d) A
33. A car of mass 1000 kg moving with a velocity of 36 km/h hits a wall and comes to rest in 5 s. Find the average force exerted by the car on the wall.
 (a) 2000 N (b) 1500 N (c) 750 N (d) 2250 N
34. The figure given below shows the displacement plotted against time for a particle. In which region the force acting on the particle is zero?

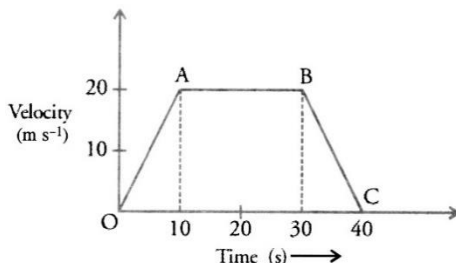


- (a) AB (b) BC (c) CD (d) DE

35. A particle starts its motion from rest under the action of a constant force. If the distance covered in first 10 s is S_1 and that covered in first 20 s is S_2 , then

- (a) $S_2 = S_1$ (b) $S_2 = 2S_1$ (c) $S_2 = 3S_1$ (d) $S_2 = 4S_1$

36. Study the velocity-time graph of a body given below and answer the question.



Find the acceleration of the body in the time-interval 10–30 seconds.

- (a) 2 ms^{-2} (b) 0 ms^{-2} (c) 20 ms^{-2} (d) 100 ms^{-2}

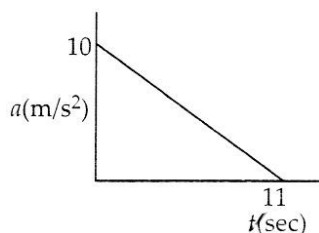
37. Area under velocity-time graph represents

- (a) distance (b) displacement (c) velocity (d) acceleration

38. A bus decreases its speed from 20 ms^{-1} to 10 ms^{-1} in 5 s. The acceleration of the bus is

- (a) 4 ms^{-2} (b) 2 ms^{-2} (c) -2 ms^{-2} (d) -4 ms^{-2}

39. A body starts from rest at time $t = 0$, the acceleration time graph is shown in the figure. The maximum velocity attained by the body will be



- (a) 110 m/s (b) 55 m/s (c) 650 m/s (d) 550 m/s

40. A body is dropped from a 100 m high cliff and at the same time another body is thrown from the ground with 25 m/s velocity in upward direction. Where the two will meet above the ground?

- (a) 50 m (b) 40 m (c) 20 m (d) 10 m

Section - III

CHEMISTRY

41. Which of the following on mixing doesn't involve energy changes?

- (a) Ammonium chloride and water
(b) Sulphuric acid and water
(c) Lime stone and water
(d) Sodium chloride and powdered limestone

42. The solid form of which of the following is called dry ice?

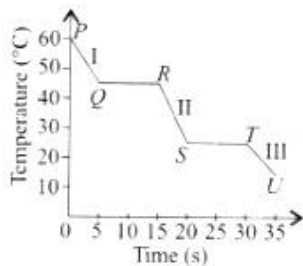
- (a) Sulphur (IV) oxide (b) Carbon (IV) oxide (c) Carbon (II) oxide (d) Carbon suboxide

43. Churning of milk to get cream from it, is called

- (a) Filtration (b) Centrifugation (c) Decantation (d) Sedimentation

44. How many the following are physical changes.
- (a) Drying of a shirt in the Sun
(b) Rising of hot air over a radiator
(c) Burning of kerosene in a lantern
(d) Change in the colour of black tea on adding lemon juice to it
(e) Churning of milk cream to get butter
(f) Making pieces of a paper
- (a) 4 (b) 5 (c) 6 (d) 3
45. Arun has prepared 0.2% (by mass) solution of sodium chloride in water. Which of the following correctly represents the composition of the solutions?
- (a) 1.00 g of NaCl + 500 g of water
(b) 0.2 g of NaCl + 100 g of water
(c) 2 g of NaCl + 998 g of water
(d) 0.2 g of NaCl + 98.0 g of water
46. Which of the following does not pertain to the term molar mass of the substance?
- (a) It is mass of one molecule of the substance
(b) It is mass of 6.022×10^{23} molecules of the substance in grams
(c) It is expressed in the units, gmol^{-1}
(d) Its numerical value is same as molecular mass of substance
47. 1.80 g of glucose is dissolved in 18 g of water. The total number of oxygen atoms in the solution is $x N_0$, where N_0 is Avogadro number. The value of x is,
- (a) 1 (b) 1.01 (c) 1.06 (d) 1.12
48. The formula of nitride of magnesium is
- (a) MgN (b) $\text{Mg}(\text{NO}_2)_2$ (c) Mg_3N_2 (d) Mg_2N_3
49. Which of the following represents correct units of molecular mass?
- (a) g (b) u (c) mg (d) kg
50. In which sample of water, dissolution of 1 g of copper sulphate will be most rapid?
- (a) 50 mL of water at room temperature (25°C) (b) 50 mL of water at 10°C
(c) 50 mL of water at 50°C (d) 50 mL of water at 0°C
51. A mixture of sulphur and carbon disulphide is
- (a) heterogeneous and shows Tyndall effect
(b) homogeneous and shows Tyndall effect
(c) heterogeneous and does not show Tyndall effect
(d) homogeneous and does not show Tyndall effect

52. The given graph represents the cooling curve of substance X. Which of the following statements are correct?



- I. The process I represents cooling of a vapour state and process II represents heating of a solid state.
- II. The boiling point is at 318K and melting point is 77°F according to the curve.
- III. At 25°C, the substance exists in solid state
- IV. The zone PQ is condensation zone, ST is freezing zone.
- V. This curve witnesses three states of matter of a substance undergoing physical change.

- (a) I and III only (b) II and IV only (c) II, IV and V only (d) III, IV and V only

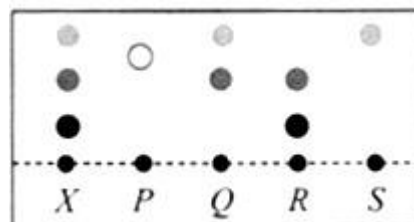
53. The latent heat of fusion of ice is 80 calories per gram. Calculate the heat required to convert 20g of ice to 20g of water at 0°C.

- (a) 1600 cal (b) 40 cal (c) 4 cal (d) 160 cal

54.

Which of the following are correct for the above chromatograph?

- (i) X contains P and R dyes
- (ii) P and R are mixtures of two different dyes
- (iii) R is one of the components of X
- (iv) S can be a component of X
- (v) X can have Q, R and S
- (vi) P and S are pure substances



- (a) (i) and (ii) only (b) (iii), (iv), (v) and (vi) only
 (c) (ii), (iii), (iv) and (v) only (d) (i), (ii) and (iii) only

55. The number of protons, neutrons and electrons in six species – I, II, III, IV, V and VI are as follows:

	p	n	e
I →	17	18	17
II →	17	20	17
III →	20	20	20
IV →	11	12	10
V →	19	21	19
VI →	9	10	10

Which of the following statements are correct?

- (p) IV and VI are isoelectronic (q) VI and IV are isobars (r) I and II are isotopes
- (s) IV and III are isoelectronic (t) III and V are isobars
- (a) (p), (r) and (s) only (b) (p), (r) and (t) only
- (c) (r) and (t) only (d) (p) and (r) only

56. Which of the following has highest number of atoms?
(a) 4g of hydrogen gas (H_2) (b) 80g of NaOH
(c) 71g of chlorine gas (Cl_2) (d) 44.8 l of H_2 at STP
57. Which of the following have same valency?
(A) 2, 8, 1 (B) 2, 1 (C) 2, 8, 8, 2 (D) 2, 8, 2
(E) 2, 8, 3 (F) 2, 8, 4
(a) A, C and D (b) C and D (c) A, B and F (d) B and E
58. A bottle of sulphuric acid has been labelled as 20% (W/W) solution; Density = 1.02 g/mL. What is the mass by volume percentage of solution?
(a) 20.4% (b) 40.8% (c) 10.2% (d) None of these
59. Vimal does an experiment, where he needs to prepare a 500ml solutions of ethyl alcohol of concentration 70% v/v. What is the amount of alcohol he would want to prepare this solutions?
(a) 350 ml (b) 35 l (c) 714 ml (d) None of these
60. X and Y are two chemical species which react to form a product Z. Z contains both X and Y. X and Y cannot be subdivided into still simple substances. Which of the following statements is false about X, Y, Z?
(i) Z is a compound (ii) X and Y are elements
(iii) X and Y are compounds (iv) Z is man made element
(a) (i) and (ii) (b) (iii) and (iv) (c) (i) and (iv) (d) (i), (iii), (iv)

Section - IV**BIOLOGY**

61. Animal cell lacking nuclei would also lack in
(a) Ribosome (b) Lysosome
(c) Endoplasmic reticulum (d) Chromosome
62. Peptidoglycan is present in cell wall of:
(a) Plant (b) Animal (c) Bacteria (d) Algae
63. The most widely distributed component in a cell is:
(a) Chromoplast (b) Chloroplast (c) RNA (d) DNA
64. Ripe fruits soften due to:
(a) Degeneration of cell walls (b) Partial solubilisation of pectic compounds
(c) Metabolism of tannins (d) Exosmosis
65. Longest animal cell is:
(a) Sperm cell (b) Nerve cell (c) Striated muscle cell (d) Ostrich egg
66. Cell doctrine was proposed by:
(a) Schleiden and Schwann (b) Watson and Crick
(c) Schleiden, Schwann and Rudolf Virchow (d) Davson and Danielli
67. Which of the following kind of lipids are most abundant in the cell membrane?
(a) Phospholipids (b) Glycolipids (c) Cholesterol (d) Cerebroside

68. The muscle fibre shown in the diagram is:



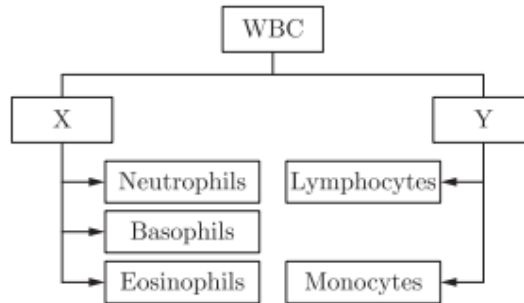
- (a) involuntary (b) voluntary (c) voluntary and involuntary (d) None of these

69. What do you think is a common feature of the following tissues?

- i. Blood ii. Phloem iii. Muscles

- (a) All are tissues (b) All are organs (c) All are cells (d) All are organ systems

70. Identify X and Y in the given flow chart.



- (a) X-Erythrocytes, Y-Leucocytes (b) X-Granulocytes, Y-Granulophils
 (c) X-Granulocytes, Y-Agranulocytes (d) X-Agranulophils, Y-Granulocytes

71. Identify simple tissues.

- (a) Parenchyma, xylem and collenchyma (b) Parenchyma, collenchyma and sclerenchyma
 (c) Parenchyma, xylem and sclerenchyma (d) Parenchyma, xylem and phloem

72. Read the given statements.

1. Many nerve cells bound together by connective tissue make up a nerve.
2. Areolar connective tissue fills the space inside the organs and helps in repair of tissues.
3. Glandular epithelium is formed by infolding of epithelial tissue.
4. Smooth muscle fibres show characteristic of both striated and unstriated muscles.
5. Skin epithelial cells are extremely thin and flat through which absorption and secretion occur. Select the incorrect statements.

- (a) 4 and 5 (b) 1, 3 and 5 (c) 1, 2 and 3 (d) 2, 3 and 4

73. Identify the features of striated muscles.

- (a) Cylindrical, striped, skeletal and voluntary (b) Spindle, unbranched and uninucleated
 (c) Cylindrical, unstriped and without nucleus (d) Cylindrical, striped and branched

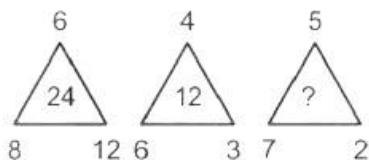
74. Given are some differences between the tissues of plants and animals. Which of these are incorrect differences?

	Plant tissue	Animal tissue
1	Tissue of plants are made up of lignified and dead cells.	Tissues in animals are made up of living cells.
2	The structural organization of plants is more complicated than that of animals.	Structural organization of animals is not complex.
3	Growth in plants is definite.	Growth in animals is indefinite.
4	There are dividing and non-dividing tissues in plants at specific regions.	They do not possess specific regions of dividing and non-dividing tissues.

- (a) 1, 3 and 4 (b) 2 and 3 (c) 3 and 4 (d) 1, 2 and 3
75. Read the given statements and select the correct ones.
- There is no demarcation of dividing and nondividing regions in animals.
 - Animals consume less energy as compared to plants.
 - Most of the tissues that plants contain are living.
 - Structural organization of organs and organ systems are more specialized animals than even in very complex plants.
 - Growth of animals is indefinite.
- (a) 2, 3 and 5 (b) 2, 3 and 4 (c) 1 and 4 (d) 1 and 5
76. Which of the following organism is included in Monera kingdom?
- (a) Bacteria (c) Agaricus (b) Euglena (d) Amoeba
77. Which of the following organism is included in Pteridophyte?
- (a) Cycas (b) Pinus (c) Deodar (d) Fern
78. Which of the following organism is included in porifera?
- (a) Sycon (b) Hydra (c) Planaria (d) Octopus
79. Which of the following animals is included in amphibia?
- (a) Lion fish (b) Toad (c) King cobra (d) Crow
80. Which of the following animals is included in Reptilia?
- (a) Flying fish (b) Hyla (c) King cobra (d) Pigeon

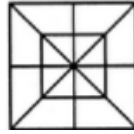
Section – V**Aptitude**

81. Two numbers are respectively 20% and 50% more than a third number. The ratio of the two numbers is
- (a) 3 : 4 (b) 4 : 5 (c) 2 : 3 (d) 2 : 4
82. Find the missing number.



- (a) 18 (b) 46 (c) 60 (d) 70

83. Find the number of squares in the given figure.

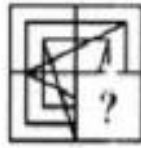



- (a) 10 (b) 8 (c) 9 (d) 12

84. Find the missing number 7, 26, 63, 124, 215, 343, ?

- (a) 481 (b) 391 (c) 511 (d) 421

85. Identify the figure that completes the pattern.



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

86. If $M = N$ and $R = S$; $N > T$; $Q < N$, then which of the following is true?

- (a) $N < M$ (b) $T < M$ (c) $N < Q$ (d) $M < Q$

87. In a certain code 'CERTAIN' is coded as 'BFQUZJM'. How is 'MUNDANE' coded in that code?

- (a) NTOCNBF (b) LVMEZOD (c) LTMCZOF (d) NTCOMBF


88. Find the missing number 15, 31, 63, 127, 255, ?

- (a) 513 (b) 511 (c) 517 (d) 523

89. Choose the set of figures which follow the given rule.

RULE: Any figure can be traced by a single unbroken line without retracting.

- (1)  (2) 

- (3)  (4) 

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

90. Pick out the wrong number in the sequence 1, 2, 6, 15, 31, 56, 91

- (a) 31 (b) 91 (c) 56 (d) 15

91. Pointing to a photograph of a boy Mr. Ram said, "He is the son of the only son of my mother" How is Mr. Ram related to that boy?

- (a) Brother (b) Uncle (c) Father (d) Cousin

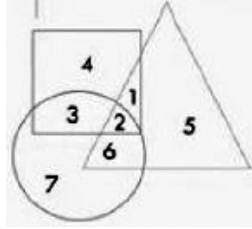
92. Find the odd one out 2, 5, 10, 17, 26, 37, 50, 64

- (a) 50 (b) 26 (c) 37 (d) 64

93. At a conference, 12 members shook hands with each other before and after the meeting. How many total numbers of handshakes occurred?

- (a) 122 (b) 100 (c) 145 (d) 132

94. In the given figure, the circle represents rural population, square represents educated youth and triangle represents employed people. Identify the letter showing rural people who are neither educated nor employed.



- (a) 7 (b) 2 (c) 4 (d) 5

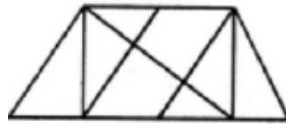
95. If day before yesterday was Thursday, then what day will be four days after tomorrow?

- (a) Saturday (b) Thursday (c) Sunday (d) Tuesday

96. One evening before sunset Rekha and Hema were talking to each other face to face. If Hema's shadow was exactly to the right of Hema. In which direction was Rekha facing.

- (a) North (b) South (c) East (d) West

97. Find the number of triangles in the given figure.

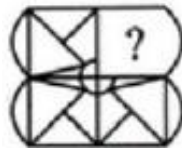






- (a) 16 (b) 10 (c) 14 (d) 12

98. A, P, R, X, S and Z are sitting in a row. S and Z are in the center. A and P are at the ends. R is sitting to the left of A. Who is the right of P?

- (a) A (b) X (c) S (d) Z

99. Identify the figure that completes the pattern.



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

100. Choose the alternatives which is closely resembles the mirror images of the given combination.

- 1965 INDOPAK
 (1) KAPODI 2961 (2) 2961 IDNIKAP
 (3) KAPODI 1965 (4) 1965 INDOPAK
 (a) 1 (b) 2 (c) 3 (d) 4

RISE SCHOLARSHIP TEST CUM ADMISSION TEST – SAMPLE PAPER

Class – 9th to 10th



Keys

Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key	Q. No.	Key
1	A	21	A	41	D	61	D	81	B
2	D	22	C	42	C	62	C	82	D
3	A	23	B	43	B	63	C	83	A
4	A	24	A	44	A	64	A	84	C
5	C	25	B	45	C	65	B	85	D
6	B	26	D	46	A	66	A	86	B
7	B	27	D	47	C	67	A	87	B
8	B	28	B	48	C	68	B	88	B
9	D	29	C	49	B	69	A	89	B
10	D	30	B	50	C	70	C	90	B
11	C	31	C	51	D	71	B	91	C
12	D	32	A	52	C	72	A	92	D
13	B	33	A	53	A	73	A	93	D
14	C	34	A	54	B	74	B	94	A
15	C	35	D	55	B	75	C	95	B
16	B	36	B	56	B	76	A	96	B
17	D	37	B	57	B	77	D	97	C
18	B	38	C	58	A	78	A	98	B
19	D	39	B	59	A	79	B	99	D
20	A	40	C	60	B	80	C	100	D