SECTION-1
PHYSICS

1. A metallic chain of length 62.8 cm and whose ends are joined together is fitted on a wooden disc. The disc rotates with 60 revolutions per second. Find the tension in the chain if the chain has a mass 40 g (1 kg f = 9.8 N)

(A) 2 kg f (B) 9.2 kg f (C) 1 kg f (D) none of these

2. A uniform disc of radius R lies in the x-y plane, with its centre at the origin, its moment of inertia about z-axis is equal to its moment of inertia about line $y = x + c$. The value of c will be

(A) $\frac{R}{2}$ (B) $\frac{R}{\sqrt{2}}$ (C) $\frac{R}{4}$ (D) R

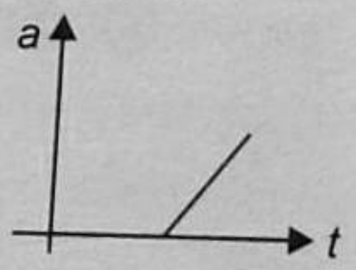
3. A metal ball B_1 (density 3.2 g cm^{-3}) is dropped in water while another metal ball B_2 (density 6.0 g cm^{-3}) is dropped in a liquid of density 1.6 g cm^{-3}. If both the balls have the same diameter and attain the same terminal velocity, the ratio of viscosity of water to that of the liquid is

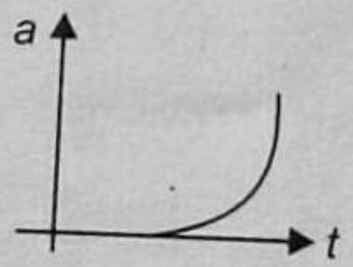
(A) 2.0 (B) 0.5
(C) 4.0 (D) indeterminate due to insufficient data

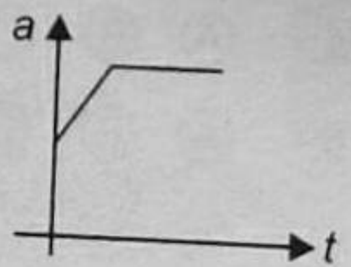
4. A 1 kg block collides with a horizontal spring of force constant 2 N m^{-1}. The block compresses the spring 4 m from the rest position of the spring. If the coefficient of friction is 0.25 between the block and floor, what is the speed of block at the instant of collision?
(Take $g = 10$ m s^{-2})

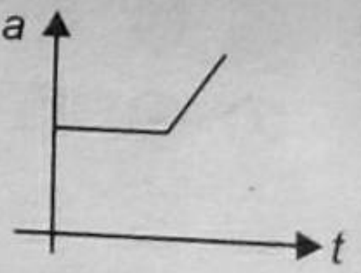
(A) 7.2 m s^{-1} (B) 9.8 m s^{-1} (C) 8 m s^{-1} (D) 10 m s^{-1}

5. A block is placed on a rough horizontal plane. A time dependent horizontal force $F = Kt$ acts on the block. Here K is a positive constant. Acceleration-time graph of the block is

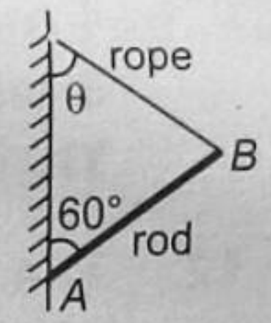
(A) 

(B) 

(C) 

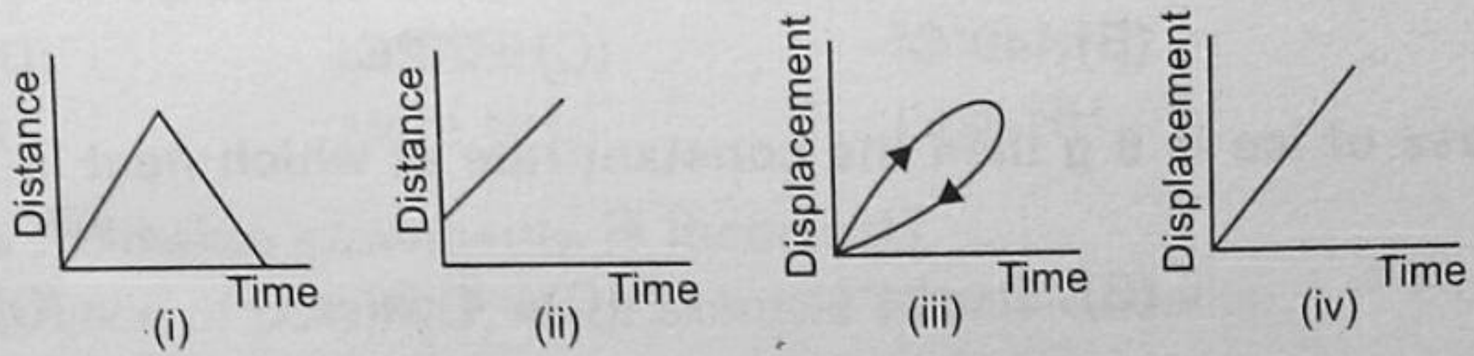
(D) 

6. A uniform rod *AB* of mass *m* is hinged to a wall at its lower end, while its upper end is held by a rope attached to the wall. For what value of θ, the tension in the rope is equal to *mg*/2?



(A) 30°
(B) 60°
(C) 45°
(D) none of these

7. Which of the following graphs is/are not possible?



(A) (i) and (iii) (B) (i) (C) (ii) and (iii) (D) (iii)

8. A body of mass 1.0 kg strikes elastically with another body at rest and continues to move in the same direction with one-fourth of its initial velocity. The mass of the other body is

(A) 0.6 kg (B) 2.4 kg (C) 3.0 kg (D) 4.0 kg

9. Three particles of equal mass *m* are situated at the vertices of an equilateral triangle of side *l*. What should be the velocity of each particle, so that they move on a circular path without changing *l*?

(A) $\sqrt{\frac{Gm}{2l}}$ (B) $\sqrt{\frac{Gm}{l}}$ (C) $\sqrt{\frac{2Gm}{l}}$ (D) $\sqrt{\frac{Gm}{3l}}$

10. A train approaching a railway crossing at a speed of 120 km/hr sounds a whistle at frequency 640 Hz when it is 300 m away from the crossing. The speed of sound in air is 340 m/s. What will be the frequency heard by a person standing on a road perpendicular to the track through the crossing at a distance of 400 m from the crossing?

(A) 680 Hz (B) 640 Hz (C) 720 Hz (D) 358 Hz

11. Statement-1 : The change in kinetic energy of a particle is equal to the work done on it by the net force.
Statement-2 : Change in kinetic energy is equal to the work done only in case of a system of one particle.

(A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
(B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
(C) Statement 1 is true but statement 2 is false
(D) Statement 1 is false and statement 2 is true.

Paragraph for Question Nos. 12 to 14

A certain amount of ice is heated at a constant rate for 14 minutes. For the first 4 minutes the temperature rises uniformly with time. Then it remains constant for 8 minutes and again the temperature rises at uniform rate for the last 2 minutes. Then,

12. The initial temperature of ice is
(A) –40°C (B) –80°C (C) 0°C (D) –20°C

13. The temperature of content at the end of 14 minutes will be
(A) 0°C (B) 40°C (C) 20°C (D) 100°C

14. If the mass of ice is 6 g then the constant rate at which heat is being supplied will be
(A) 1 cal s^{-1} (B) 2 cal s^{-1} (C) 4 cal s^{-1} (D) 0.5 cal s^{-1}

15. An empty balloon weights 1 g. The balloon is filled with water to the neck and tied with a massless thread. The weight of balloon along with water is 101 g. The balloon filled with water weighted when fully immersed. Then its weight in water is
(A) 1 g (B) 101 g (C) 201 g (D) 51 g

CHEMISTRY

16. Zinc on reaction with NaOH gives a salt (*P*) along with a gas (*X*). (*P*) on reaction with a gas (*Y*) gives white precipitate (*W*). Which of the following is correct?
(A) (*P*) is Na_4ZnO_3, (*Y*) is H_2S (B) (*X*) is H_2, (*W*) is $Zn(OH)_2$
(C) (*P*) is Na_2ZnO_2, (*X*) is O_2 (D) (*W*) is ZnS, (*X*) is H_2

17. Enthalpy of $CH_4 + 1/2O_2 \rightarrow CH_3OH$ is negative. If enthalpy of combustion of CH_4 and CH_3OH are '*x*' and '*y*' respectively, then which of the following relations is correct?
(A) $x > y$ (B) $x < y$ (C) $x = y$ (D) None of these

18. Calcium and chlorine form $CaCl_2$ rather than CaCl because
(A) less energy is required to remove one electron from the calcium atom than to remove two electrons.
(B) more energy is released in forming chloride ions from chlorine molecules in the formation of $CaCl_2(s)$ than in the formation of CaCl(*s*).
(C) the lattice energy of CaCl(*s*) is less exothermic than that of $CaCl_2(s)$.
(D) when CaCl(*s*) is formed from its elements, more energy is released than when $CaCl_2(s)$ is formed from its elements.

19. Aluminothermy, used for the spot welding of large iron structures is based on which fact?
(A) Reaction between Fe and oxygen is endothermic.
(B) As compared to Al, Fe has greater affinity for oxygen.
(C) As compared to Fe, Al has greater affinity for oxygen.
(D) Reaction between Al and oxygen is endothermic.

20. The reaction $N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$ is exothermic. Which of the following options correctly state the changes in the equilibrium yield of ammonia (NH_3) when the reaction conditions are altered as indicated:

	An increase in temperature	An increase in pressure	Use of a catalyst
(A)	More NH_3	Less NH_3	No change
(B)	Less NH_3	More NH_3	No change
(C)	More NH_3	Less NH_3	More NH_3
(D)	Less NH_3	More NH_3	Less NH_3

21. **Which of the following statements is incorrect?**

(A) Decomposition of pure H_2O_2 is an example of auto-oxidation.
(B) H_2O_2 has basic properties.
(C) H_2O_2 behaves as a reducing agent towards acidified $KMnO_4$.
(D) It is paramagnetic.

22. **In Bohr series of lines of hydrogen spectrum, the third line from the red end corresponds to which one of the following inter-orbit jumps of the electron?**

(A) $5 \rightarrow 2$ (B) $4 \rightarrow 1$ (C) $2 \rightarrow 5$ (D) $13 \rightarrow 2$

23. **Match column I with column II and select the correct answer using the codes given below.**

Column I (Pollutant)	Column II (Source)
(P) Microorganisms	1. Chemical fertilizers
(Q) Plant nutrients	2. Abandoned coal mines
(R) Sediments	3. Domestic sewage
(S) Mineral acids	4. Erosion of soil by strip mining
	5. Detergents

	P	Q	R	S
(A)	3	1	4	2
(B)	2	5	3	1
(C)	1	3	2	4
(D)	4	2	1	5.

24. **Which of the following statements is correct?**

(A) Resonance increases the stability of a molecule and decreases its reactivity.
(B) In inductive effect, the electron pairs are permanently displaced to the next valency shell.
(C) In electromeric effect, the electron pair is transferred completely with the result of positive and negative charges.
(D) None of these.

25. **When magnesium metal is combined with aluminium, zinc, copper and manganese, we get a light, hard alloy called electron which is used for making**

(A) propellers of engine and aircraft (B) pressure cookers
(C) plates for light ships (D) weights for measuring gold.

26. **An experiment requires 100 cm^2 of 20.0% H_2SO_4, density 1.14 g/cm^3. How much concentrated acid of density 1.84 g/cm^3 and containing 98% H_2SO_4 by weight, must be diluted with water to prepare 100 cm^3 acid of the required solution?**

(A) 8.1 cm^3 (B) 12.7 cm^3 (C) 18.1 cm^3 (D) 21.3 cm^3

27. **In a flask of volume '*V*' litres, 0.2 mol of oxygen, 0.4 mol of nitrogen, 0.1 mol of ammonia and 0.3 mol of helium are enclosed at 27°C. If the total pressure exerted by these non-reacting gases is 1 atmosphere, the partial pressure exerted by nitrogen is**

(A) 1 atm (B) 0.1 atm (C) 0.2 atm (D) 0.4 atm

28. **Reduction of 2-butyne first with Na in liquid ammonia gives an alkene which upon catalytic hydrogenation with D_2/Pt gives an alkane. The alkene and alkane formed respectively are**

(A) *cis*-2-butene and *racemic*-2, 3-dideuterobutane.
(B) *trans*-2-butene and *meso*-2, 3-dideuterobutane.
(C) *trans*-2-butene and *racemic*-2, 3 dideuterobutane.
(D) *cis*-2-butene and *meso*-2, 3 dideuterobutane.

29. **An element has successive ionization energies as 940 (first), 2080, 3090, 4140, 7030, 7870, 16000 and 19500 kJ mol^{-1}. To which group of the periodic table does this element belong?**

(A) 16 (B) 15 (C) 14 (D) 17

30. **Which of the following is a redox reaction?**

(A) $NaCl + KNO_3 \rightarrow NaNO_3 + KCl$ (B) $CaC_2O_4 + 2HCl \rightarrow CaCl_2 + H_2C_2O_4$
(C) $Mg(OH)_2 + 2NH_4Cl \rightarrow MgCl_2 + NHOH$ (D) $Zn + 2AgCN \rightarrow 2Ag + Zn(CN)_2$

SECTION-2
MATHEMATICS

31. **The condition that the roots of the equation $ax^2 + bx + c = 0$ be such that one root is n times the other is**

(A) $nc^2 = ab(n + 1)^2$ (B) $na^2 = bc(n + 1)^2$
(C) $nb^2 = ca(n + 1)^2$ (D) None of these

32. **The sum of $(n - 1)$ terms of $1 + (1 + 3) + (1 + 3 + 5) + (1 + 3 + 5 + 7) + ...$ is**

(A) $\frac{n(n+1)(2n+1)}{6}$ (B) $\frac{n(n-1)(2n-1)}{6}$ (C) $\left(\frac{n(n+1)}{2}\right)^2$ (D) $\frac{n(n+1)}{2}$

33. **The general term in the expansion of $(1 - 2x)^{3/4}$ is**

(A) $\frac{-3^r}{2^r r!}x^r$ (B) $\frac{-3^r}{2^r (2r)!}x^r$ (C) $\frac{-3}{2^r r!}x^2$ (D) None of these

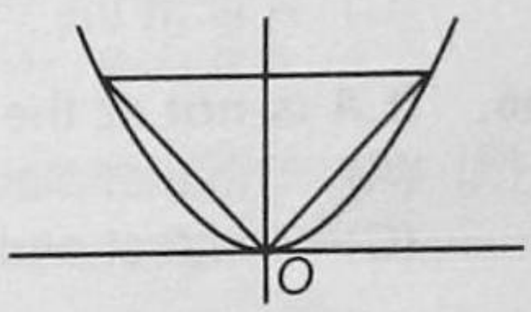
34. **The value of $\lim_{x\to 0}\left(\frac{1+5x^2}{1+3x^2}\right)^{1/x^2}$ is**

(A) e^2 (B) e (C) e^{-1} (D) None of these

35. **The slope of a non vertical line passing through the point (2, 3) and making intercept of length 2 units between the lines $y + 2x = 3$ and $y + 2x = 5$ must be**

(A) 3/2 (B) –3/2 (C) –3/4 (D) None of these

36. **The area of the triangle formed by the lines joining the vertex of the parabola $x^2 = 12y$ to the end of latus rectum is**



(A) 12 (B) 18

(C) $6\sqrt{3}$ (D) None of these

37. **A person can kill a bird with probability 3/4. He tries 5 times what is the probability that he may not kill the bird.**

(A) $\frac{1023}{1024}$ (B) $\frac{1}{1024}$ (C) $\frac{781}{1024}$ (D) $\frac{243}{1024}$

38. **If the standard deviation of 0, 1, 2, 3, ..., 9 is k, then the standard deviation of 10, 11, 12, ..., 19**

(A) k (B) $10 + k$ (C) $k + \sqrt{10}$ (D) $10k$

39. **Which of the following is a statement?**

(A) May you live long!

(B) Hurrah! we have won the match

(C) What a great fall it is !

(D) The Quadratic Equation $x^2 - 5x + 6 = 0$ has two real roots

40. **The function $\log_{10}[(1 - \log_{10}(x^2 - 5x + 16)]$, has domain**

(A) $(0, 2) \cup (2, \infty)$ (B) (1, 4) (C) (2, 3) (D) all x

41. **A, B, C are angles of a triangle, such that $\sin^2 A + \sin^2 B + \sin^2 C$ = constant, find $\frac{dA}{dB}$**

(A) $\frac{\sin A}{\sin(2A+B)}$ (B) $\frac{-\sin B}{\sin(2A+B)}$ (C) $\frac{\cos B}{\sin(2A+B)}$ (D) $\frac{-\cos B}{\sin(2A+B)}$

42. **What is the locus of point of intersection of tangents of $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ drawn at the extremeties of a chord subtending 90° at origin is**

(A) $\frac{x^2}{a^4}+\frac{y^2}{b^4}=\frac{1}{a^2}+\frac{1}{b^2}$ (B) $\frac{x^2}{a^4}+\frac{y^2}{b^4}=\left(\frac{1}{a}+\frac{1}{b}\right)^2$

(C) $a^2x^2 + b^2y^2 = (a^2 + b^2)^2$ (D) $x^2 + y^2 = a^2 + b^2$

43. **The number of ways in which 6 different balls can be put in two boxes of different sizes so that no box remain empty is**

(A) 64 (B) 62 (C) 36 (D) None of these

44. **What is the remainder when 4^{96} is divided by 6?**

(A) 0 (B) 2 (C) 3 (D) 4

DIRECTION (45-46) : Answer the questions based on the following information.
***A*, *B*, *C* and *D* are to be seated in a row. But *C* and *D* cannot be sat together. Also *B* cannot be sat at the third place.**

45. **Which of the following must be false?**

(A) *A* is at the first place (B) *A* is at the second place
(C) *A* is at the third place (D) *A* is at the fourth place

46. **If *A* is not at the third place, then *C* has which of the following options?**

(A) The first place only (B) The third place only
(C) The first and third place only (D) Any of the places

47. **A vechicle starts from point *P* and runs 10 km towards North. It takes a right turn and runs 15 km. It now runs 6 km after taking a left turn. It finally takes a left turn and runs 15 km and stops at point *Q*.**
How far is point *Q* with respect to point *P*?

(A) 16 km (B) 25 km (C) 4 km (D) 0 km

48. **The following question are based on the five three-digit numbers given below :**

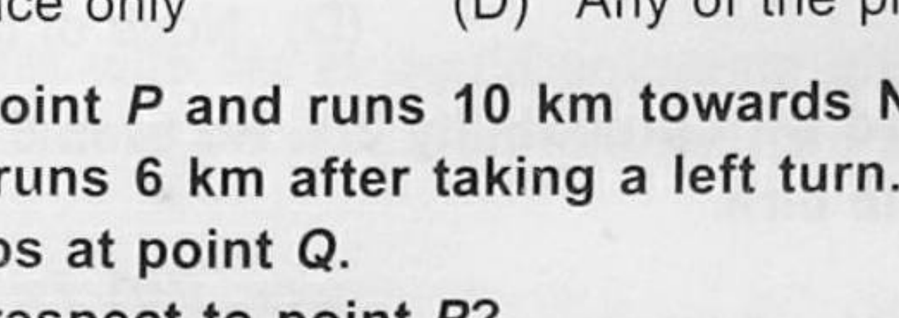
394 632 783 576 895

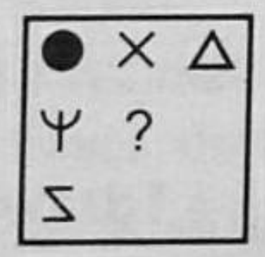
If the first and second digits of each of the numbers are added, then the resulting sum of which of the following numbers will not be exactly divisible by 3?

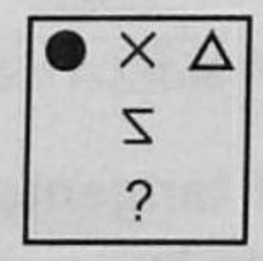
(A) 895 (B) 394 (C) 576 (D) 632

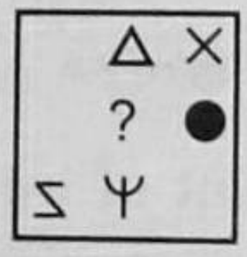
49. **Four Problem Figures marked with 1, 2, 3 and 4 form a sequence. In order to continue this sequence select a figure from amongst the four options, that would become the figure marked with 5.**

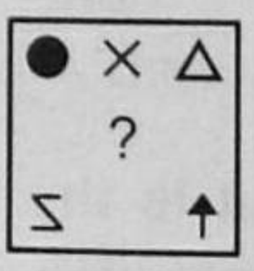
Problem Figures



(A) 

(B) 

(C) 

(D) 

50. **You are given a combination of alphabets and numbers followed by four alternatives A, B, C and D. Choose the alternative which most closely resembles the water-image of the given combination.**

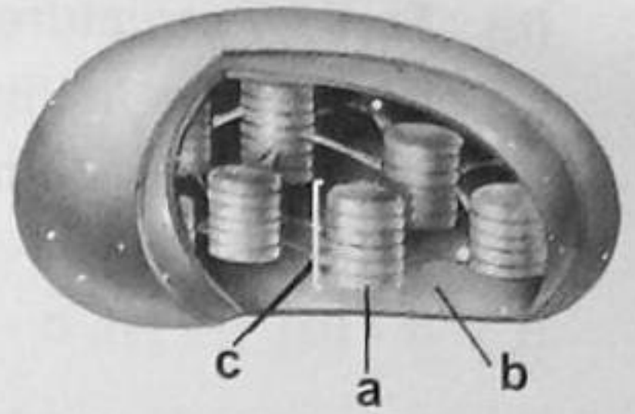
VAYU8436

(A) ΛΨ∧∩8Ϥ3Ɛ9 (B) ΛΨ∧∩8Ϥ3Ɛ9 (C) ΛΨ∧∩8Ϥ39 (D) ΛΨ∧∩8Ϥ3Ɛ9

OR

BIOLOGY

31. Plants are autotrophic and synthesize their own food by the process of photosynthesis using simpler inorganic raw materials (CO_2 & water) in presence of light. The overall reaction is given below.



$$6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Light}} C_6H_{12}O_6 + 6H_2O + 6O_2$$

This reaction takes place in which of the labelled parts of the chloroplast ?

(A) a (B) b (C) c (D) a, b & c

32. Which of the following shows the correct positions of the phosphate (P), sugar (S) and base (B) molecules in the line diagrams representing structure of DNA?

(A)
P
|
B — S
|
P
|
B — S
|
P
|
B — S
|
P

(B)
B
|
P — S
|
B
|
P — S
|
B
|
P — S
|
B

(C)
P
|
S — B
|
P
|
S — B
|
P
|
S — B
|
P

(D)
S
|
B — P
|
S
|
B — P
|
S
|
B — P
|
S

33. Select the mismatched pair out of the following.

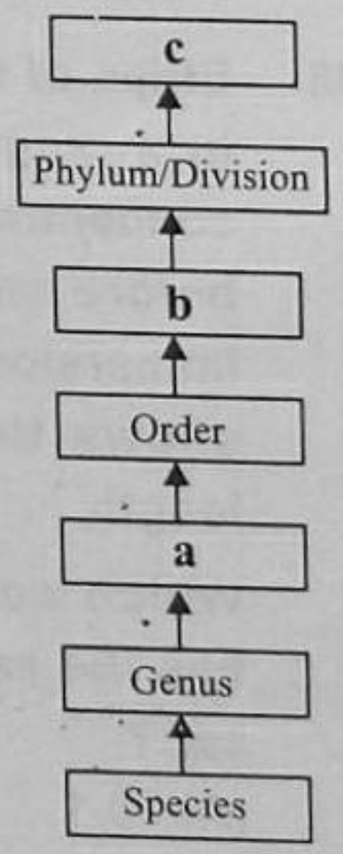
(A) Radial vascular bundle – Xylem and phloem on different radii

(B) Bicollateral vascular bundle – Phloem present on both sides of xylem

(C) Amphivasal vascular bundle – Phloem surrounds xylem

(D) Conjoint collateral vascular bundle – Xylem and phloem on same radii

34. The given flowchart represents the hierarchy of various taxonomic categories. Identify the missing categories (a, b and c) and select the correct statements regarding these.



(i) 'a' is the taxonomic category which contains a number of related genera.

(ii) Examples of category 'b' are Monocotyledoneae, Dicotyledoneae, Mammalia, etc.

(iii) 'c' represents the basic unit of taxonomic hierarchy.

(iv) Examples of category 'c' are Fungi, Monera, Protista, etc.

(A) (i) and (ii) (B) (iii) and (iv)

(C) (i), (ii) and (iv) (D) (i), (ii), (iii) and (iv)

35. **Match Column-I with Column-II and select the correct option from the codes given below.**

Column - I	Column - II
(a) Allosteric inhibitor	(i) Inactivates an enzyme by denaturing it
(b) Tertiary structure	(ii) Inactivates an enzyme by changing its shape
(c) Irreversible inhibitor	(iii) Produces the active site of an enzyme
(d) Competitive inhibitor	(iv) Inactivates an enzyme by occupying its active site

(A) a - (ii), b - (iii), c - (i), d - (iv)
(B) a - (ii), b - (iii), c - (iv), d - (i)
(C) a - (iii), b - (ii), c - (i), d - (iv)
(D) a - (iv), b - (iii), c - (i), d - (ii)

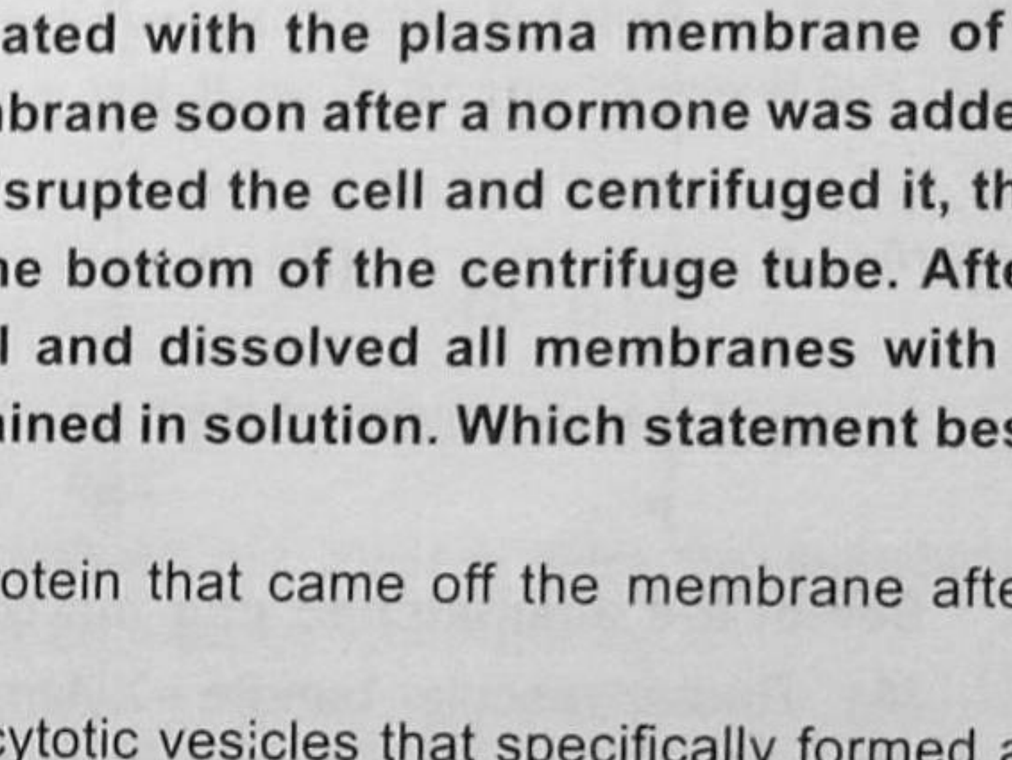
36. **One hormone is used to speed up the malting process in barley, another is used to promote flowering in pineapple, while the third helps in the delay of leaf senescence. These are respectively**

(A) auxin, gibberellin and cytokinin
(B) gibberellin, cytokinin and auxin
(C) gibberellin, auxin and cytokinin
(D) cytokinnin, auxin and gibberellin

37. **A scientist discovered that a protein associated with the plasma membrane of a cultured animal cell disappeared from the membrane soon after a normone was added to the cell. After adding the hormone, if she disrupted the cell and centrifuged it, the protein did not stay in solution but went to the bottom of the centrifuge tube. After adding the hormone, if she disrupted the cell and dissolved all membranes with a detergent before centrifuging, the protein remained in solution. Which statement best explains her results?**

(A) The protein was a peripheral membrane protein that came off the membrane after hormone treatment.
(B) The hormone caused the cell to make endocytotic vesicles that specifically formed at sites in the plasma membrane that contained the protein.
(C) The hormone destroyed the protein.
(D) The hormone bound to the protein to make the protein heavier.

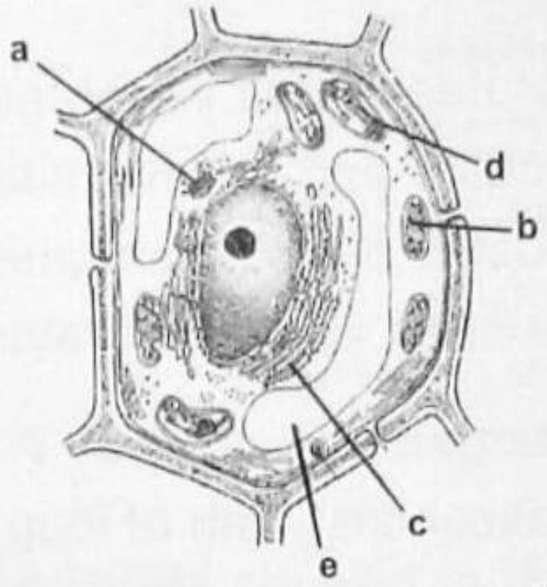
38. **Strips of the same plant tissue were immersed in a range of sucrose solution of different concentrations. Their lengths were measured before immersion and after 30 minutes of immersion in different solutions. The graph shows the ratio of initial length to final length.**



Which concentration of sucrose solution has the same water potential as that of cell sap?

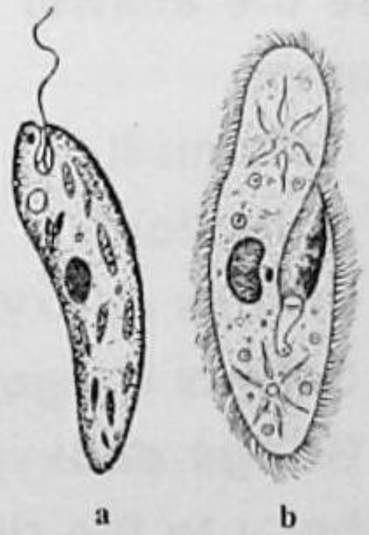
(A) 0.1
(B) 0.25
(C) 0.45
(D) 0.6

39. **Given diagram represents the ultrastructure of a plant cell. Identify the functions of the organelles labelled as a, b, c, d and e in the diagram.**



	a	b	c	d	e
(A)	Intracellular transport	Site of oxidative phosphory-lation	Principle director of macromole cular traffic	Site of photo-phospho-rylation	Storage of cell sap
(B)	Principle director of macromole-cular traffic	Site of oxidative phosphory-lation	Intracellular transport	Site of photo phospho rylation	Storage of cell sap
(C)	Site of pho-tophosphor-ylation	Storage of cell sap	Intracellular transport	Site of oxidative phospho-rylation	Principle director of macromole -cular traffic
(D)	Storage of cell sap	Site of oxidative phosphory-lation	Principle director of macromol-ecular traffic	Site of photo-phospho-rylation.	Intracell-ular transport

40. **Which of following statements is correct for the given figures?**



(A) Both the organisms belong to kingdom Protista.
(B) Both move with the help of flagella.
(C) 'a' shows heterotrophic as well as autotrophic mode of nutrition, while 'b' shows only heterotrophic mode of nutrition.
(D) Both (A) & (C).

41. **In some chordates, the notochord is modified as the vertebral column. Such animals are called vertebrates. Which one of the following statements makes sense regarding it?**

(A) All chordates are vertebrates but all vertebrates are not chordates.

(B) All vertebrates are chordates and all chordates are vertebrates.

(C) All vertebrates are chordates but all chordates are not vertebrates.

(D) Chordates are not vertebrates and vertebrates are not chordates.

42. **Which of the following statements is correct ?**

(A) Water reabsorption in descending limb of loop and collecting duct occur under similar conditions.

(B) Sodium reabsorption in ascending limb of loop and collecting duct occur under similar conditions.

(C) Water reabsorption in descending limb of loop and collecting duct occur under different conditions.

(D) Water reabsorption in descending limb and sodium reabsorption in ascending limb of loop occur under similar conditions.

43. **Select the correct matching of a hormone, its source and function.**

	Hormone	Source	Function
(A)	Vasopressin	Posterior pituitary	Increases loss of water through urine
(B)	Norepinephrine	Adrenal medulla	Increases heart beat, rate of respiration and alertness
(C)	Glucagon	Beta-cells of Islets of Langerhans	Stimulates glycogenolysis
(D)	Prolactin	Posterior pituitary	Regulates growth of mammary glands and milk formation in females

44. **Match the blood vessels of human heart listed under Column-I with the functions given under Column-II. Choose the answer which gives the correct combination of the alphabets of the two columns:**

	Column-I (Blood vessel)		Column-II (Function)
a.	Superior vena cava	p.	Carries deoxygenated blood to lungs
b.	Inferior vena cava	q.	Carries oxygenated blood to lungs
c.	Pulmonary artery	r.	Brings deoxygenated blood from lower parts of the body to the right atrium
d.	Pulmonary vein	s.	Brings oxygenated blood to the left atrium
		t.	Brings deoxygenated blood from upper parts of the body into the right atrium.

(A) a = s, b = t, c = r, d = p

(B) a = t, b = p, c = r, d = q

(C) a = t, b = p, c = q, d = r

(D) a = t, b = r, c = p, d = s

45. **Oxygen and carbon dioxide levels in four tissues are given below. Identify the correct one.**

	Alveoli		Arterial Blood		Muscle at work		Venous Blood	
	PO_2	PCO_2	PO_2	PCO_2	PO_2	PCO_2	PO_2	PCO_2
(A)	96	40	104	40	0-12	50-80	40	46
(B)	104	40	96	40	0-12	50-80	40	46
(C)	104	40	40	46	0-12	50-80	96	40
(D)	96	40	104	40	40	46	0-12	50-80

46. **The problem of electrical discontinuity caused in the normal heart by the connective tissue separating the atria from the ventricles is solved by**

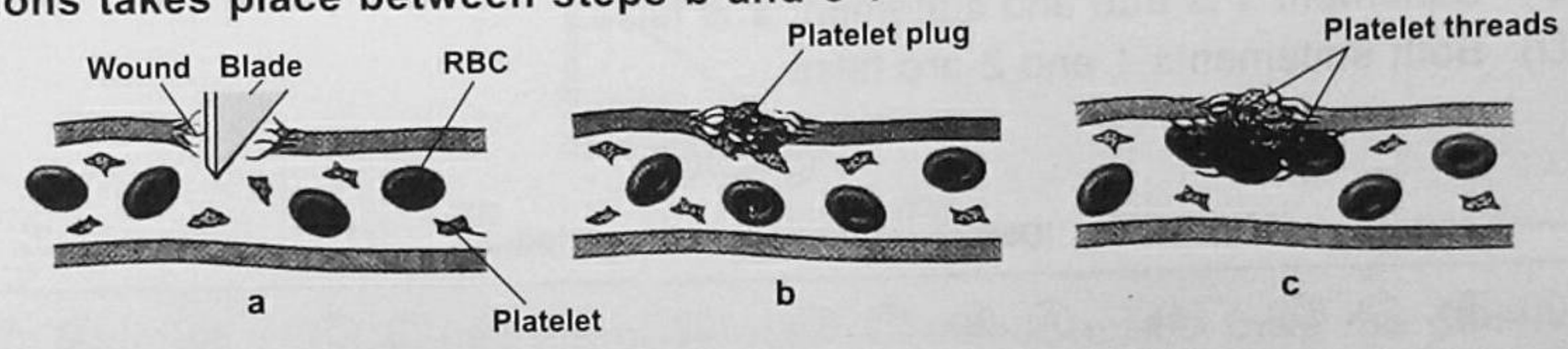
(A) Coordinating electrical activity in the atria with electrical activity in the ventricles by connecting them *via* the bundle of His

(B) Having the A-V node function as a secondary pacemaker

(C) Having an ectopic pacemaker

(D) Coordinating electrical activity in the atria with electrical activity in the ventricles by connecting them *via* the vagus nerve.

47. **The given figure shows blood clotting steps a, b and c. Which of the following reactions takes place between steps b and c ?**



(A) Prothrombinogen ⟶ Thrombinogen
↓
Fibrinogen ⟶ Fibrin

(B) Fibrinogen ⟶ Fibrin
↓
Prothrombin ⟶ Thrombin

(C) Prothrombin ⟶ Thrombin
↓
Fibrinogen ⟶ Fibrin

(D) Thrombinogen ⟶ Thrombin
↓
Fibrin ⟶ Fibrinogen

48. **The blood-brain barrier**

(A) Consists of both anatomical and physiological factors.

(B) Regulates to some extent the passage of substances from the blood to the interstitial fluid of the brain.

(C) Is anatomically related to the formation of tight junctions between adjacent capillary endothelial cells.

(D) All of the above are correct.

49. **Which of the following differences between female cockroach and male cockroach is correct?**

	Female cockroach	**Male cockroach**
(A)	A pair of unsegmented anal style is present.	Anal styles are absent.
(B)	The abdomen is short and broad.	The abdomen is long and narrow.
(C)	Females have longer antennae.	Males have shorter antennae.
(D)	The 8th tergum is covered by the 7th tergum and is thus not very distinct.	The 8th and 9th terga are covered by 7th tergum and are not very distinct.

50. **Read the given statements and select the correct option.**

Statement 1 : Glomerular filtration does not require expenditure of energy by renal cells.

Statement 2 : Glomerular filtration takes advantage of pressure gradient between loops of Henle.

(A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.

(B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.

(C) Statement 1 is true and statement 2 is false.

(D) Both statements 1 and 2 are false.