



PANDEY SIR'S IITIAN CLASSES

• IIT-JEE • MEDICAL • FOUNDATION • BOARD



SAMPLE PAPER

INSTRUCTIONS:

1. This Questions paper contains 14 printed pages and 100 questions. All questions are compulsory. Please ensure that the question Paper you have received contains all questions and pages. If you find some mistake like missing questions or pages then contact the invigilator immediately.
2. The Question Paper contains 25 questions of Physics, 25 questions of Chemistry and 50 questions of Biology.
3. All questions are straight objective type questions and each carries 4 options for their answers out of which only one is correct.
4. Each Question carries **4 Marks**.
There is **NEGATIVE** Marking and **1 mark** will be deducted for each wrong answer.
5. You have to indicate your response by darkening the appropriate bubble on the OMR sheet provided.
6. Use only HB pencil or Black/Blue Ball Pen for darkening the bubble(s).
7. Use of calculator, Log Table, Slide Rule & Mobile is not allowed. If you are carrying any of these, then keep them at a place specified by invigilator at your own responsibility.
8. No extra sheet will be provided for rough work.

**+1 Moving +2
(Medical)**



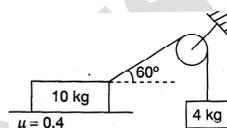
PHYSICS

Q1. A stone is dropped from a height h . Simultaneously, another stone is thrown up from the ground which reaches a height $4h$. The two stones cross each other after time

- (a) $\sqrt{\frac{h}{2g}}$ (b) $\sqrt{\frac{h}{8g}}$ (c) $\sqrt{2hg}$ (d) $\sqrt{8hg}$

Q2. The value of frictional force and acceleration of block of mass 10 kg, as shown in the figure, are

- (a) 10 N, 1 m/s^2 (b) 20 N, 2 m/s^2 (c) 20 N, 0 m/s^2 (d) 10 N, 0 m/s^2



Q3. Starting from rest, a particle rotates in a circle of radius $R = \sqrt{2} \text{ m}$ with an angular acceleration $\alpha = (\pi/4) \text{ rad/s}^2$. The magnitude of average velocity of the particle over the time it rotates a quarter circle is

- (a) 1.5 m/s (b) 2 m/s (c) 1 m/s (d) 1.25 m/s

Q4. If a_r and a_t represent radial and tangential accelerations respectively, the motion of a particle will be uniformly circular, if

- (a) $a_r = 0$ and $a_t = 0$ (b) $a_r = 0$, but $a_t \neq 0$ (c) $a_r \neq 0$ but $a_t = 0$ (d) $a_r \neq 0$, and $a_t \neq 0$

Q5. If the equation for the displacement of a particle moving on a circular path is given by

$$\theta = 2t^3 + 0.5,$$

where θ is in radian and t in second, then the angular velocity of the particle at $t = 2$ sec is

- (a) 8 rad/s (b) 12 rad/s (c) 24 rad/s (d) 36 rad/s

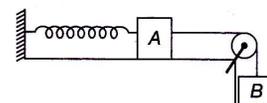
Q6. In the figure below, block A is of mass m and block B is of mass $2m$. The spring has a force constant k . All the surfaces are smooth and the system is released from rest with spring unstretched, then

(a) The maximum extension of the spring is $\frac{4mg}{k}$.

(b) The speed of block A when extension in spring is $\frac{2mg}{k}$, is $2g\sqrt{\frac{m}{k}}$.

(c) The net acceleration of block B when the extension in the spring is maximum, is $\frac{g}{2}$.

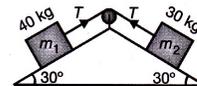
(d) Tension in the thread for extension of $\frac{2mg}{k}$ in spring is mg .



SPACE FOR ROUGH WORK



- Q7.** Two masses 40 kg and 30 kg are connected by a weightless string passing over a frictionless pulley as shown in the figure. All surfaces are smooth. The tension in the string will be
 (a) 188 N (b) 368 N (c) 288 N (d) 168 N

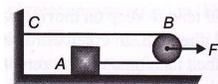


- Q8.** The upper half of an inclined plane with inclination ϕ is perfectly smooth while the lower half is rough. A body starting from rest at the top will again come to rest at the bottom if the coefficient of friction for the lower half is given by
 (a) $2 \tan \phi$ (b) $\tan \phi$ (c) $2 \sin \phi$ (d) $2 \cos \phi$

- Q9.** A block takes n times as much time to slide down on a rough 45° inclined than it takes to slide down on an identical but smooth inclined plane. What is the coefficient of kinetic friction between block and the rough plane?

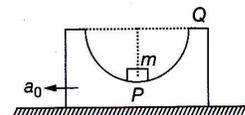
- (a) $\mu_s = 1 - \frac{1}{n^2}$ (b) $\mu_s = \sqrt{1 - \frac{1}{n^2}}$ (c) $\mu_k = 1 - \frac{1}{n^2}$ (d) $\mu_k = \sqrt{1 - \frac{1}{n^2}}$

- Q10.** The acceleration of light pulley is, (Mass of block A is m)
 (a) F/m (b) $F/2m$ (c) $F/4m$ (d) $F/8m$



- Q11.** A small block of mass m lying at rest at point P of a wedge having a smooth semi-circular track of radius R . What should be the minimum value of horizontal acceleration a_0 of wedge so that mass can just reach the point Q?

- (a) $g/2$ (b) \sqrt{g}
 (c) g (d) Not possible



- Q12.** The work done by a force $F = kx^2$ acting on a particle at an angle 60° with x -axis to displace it from $x = 2$ m to $x = 3$ m is

- (a) $\frac{5}{6}k$ (b) $\frac{5}{2}k$ (c) $\frac{19}{2}k$ (d) $\frac{19}{6}k$

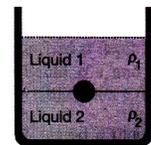
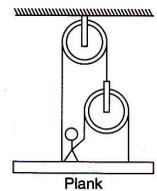
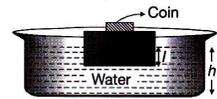
- Q13.** From the top of a tower, a stone is thrown up and it reaches the ground in time t_1 . A second stone is thrown down with the same speed and it reaches the ground in time t_2 . A third stone is released from rest and it reaches the ground in time t_3 .

- (a) $t_3 = \frac{1}{2}(t_1 + t_2)$ (b) $t_3 = \sqrt{t_1 t_2}$ (c) $\frac{1}{t_3} = \frac{1}{t_2} - \frac{1}{t_1}$ (d) $t_3^2 = t_1^2 - t_2^2$

SPACE FOR ROUGH WORK



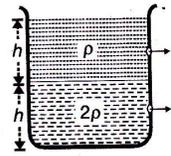
- Q14.** A projectile of mass m is thrown with velocity v making an angle of 30° with vertical. Neglecting air resistance the magnitude of change in momentum between the starting point and at the maximum height is
 (a) $\frac{mv}{2}$ (b) $\frac{\sqrt{3}mv}{2}$ (c) mv (d) $\frac{\sqrt{7}mv}{2}$
- Q15.** If a cyclist moving with a speed of 4.9 m/s on a level road can take a sharp circular turn of radius 4 m, then coefficient of friction between the cycle tyres and road is
 (a) 0.51 (b) 0.41 (c) 0.71 (d) 0.61
- Q16.** A ball of mass m is tied up with string and rotated along a horizontal circle of radius r . At an instant, its velocity is v , and tension in string is T , the force required for circular motion is
 (a) $T - \frac{mv^2}{r}$ (b) $T + \frac{mv^2}{r}$ (c) $\frac{mv^2}{r}$ (d) Zero
- Q17.** A wooden block with a coin placed on its top, floats in water as shown in the figure. The distance ℓ and h are shown in figure. After some time the coin falls into the water. Then
 (a) ℓ decreases and h increases (b) ℓ increases and h decreases
 (c) Both ℓ and h increase (d) Both ℓ and h decrease
- Q18.** In the figure, the force with which the man should pull the rope to hold the plank in position is F . If weight of the man is 60 kgf, the plank and pulleys have negligible masses, then ($g = 10 \text{ m/s}^2$)
 (a) $F = 150 \text{ N}$ (b) $F = 240 \text{ N}$ (c) $F = 300 \text{ N}$ (d) $F = 1200 \text{ N}$
- Q19.** A jar is filled with two non-mixing liquids 1 and 2 having densities ρ_1 and ρ_2 respectively. A solid ball, made of a material of density ρ_3 , is dropped in the jar. It comes equilibrium in the position shown in the figure. Which of the following is true for ρ_1, ρ_2 and ρ_3 ?
 (a) $\rho_3 < \rho_1 < \rho_2$ (b) $\rho_1 > \rho_3 < \rho_2$ (c) $\rho_1 < \rho_2 < \rho_3$ (d) $\rho_1 < \rho_3 < \rho_2$



SPACE FOR ROUGH WORK

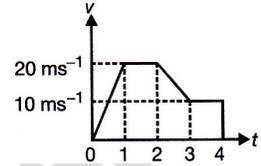


- Q20.** Equal volumes of two immiscible liquids of densities ρ and 2ρ are filled in a vessel as shown in figure. Two small holes are punched at depth $h/2$ and $3h/2$ from the surface of lighter liquid. If v_1 and v_2 are the velocities of efflux at these two holes, then v_1/v_2 is



- (a) $\frac{1}{2\sqrt{2}}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{1}{\sqrt{2}}$

- Q21.** The variation of velocity (v) of a particle moving along a straight line is shown in the given figure, where v is in meter/sec and t is in second. The distance covered by the particle in four seconds is

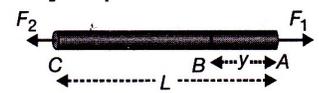


- (a) 25 m (b) 55 m (c) 35 m (d) 45 m

- Q22.** A ball rolls off the top of a staircase with a horizontal velocity u m/s. If the steps are h metre high and b metre wide, the ball will hit the edge of the n th step, if

- (a) $n = \frac{2hu}{gb^2}$ (b) $n = \frac{2hu^2}{gb}$ (c) $n = \frac{2hu^2}{gb^2}$ (d) $n = \frac{hu^2}{gb^2}$

- Q23.** A rod of length L and mass M is acted on by two unequal forces F_1 and F_2 ($< F_1$) as shown in the following figure. The tension in the rod at a distance y from the end A is given by



- (a) $F_1\left(1 - \frac{y}{L}\right) + F_2\left(\frac{y}{L}\right)$ (b) $F_2\left(1 - \frac{y}{L}\right) + F_1\left(\frac{y}{L}\right)$ (c) $(F_1 - F_2)\frac{y}{L}$ (d) None of these

- Q24.** The potential energy of a particle of mass 5 kg moving in the x - y plane is given by $U = -7x + 24y$ joule, x and y being in metre. Initially at $t = 0$ the particle is at the origin and moving with velocity $(2\hat{i} + 3\hat{j})$ m/s. The magnitude of the force on the particle and the acceleration of the particle are

- (a) 35 N, 7 m/s^2 (b) 30 N, 6 m/s^2 (c) 25 N, 5 m/s^2 (d) None of these

- Q25.** What is the minimum velocity with which a body of mass m must enter a vertical loop of radius R , at its lowest point, so that it can complete the loop?

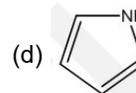
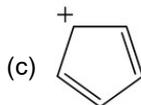
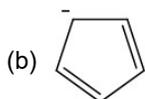
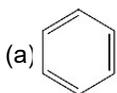
- (a) $\sqrt{2gR}$ (b) $\sqrt{3gR}$ (c) $\sqrt{5gR}$ (d) \sqrt{gR}

SPACE FOR ROUGH WORK



Q26. Which of the following have the highest number of atoms?
 (a) 1.5g of O (b) 1g of O₂ (c) 1g of O₃ (d) All have same number of atoms

Q27. Which of them is anti aromatic?



Q28. Which of the following will not give a sooty flame when burned in air?
 (a) C₄H₁₀ (b) Benzene (c) C₂H₄ (d) C₃H₄

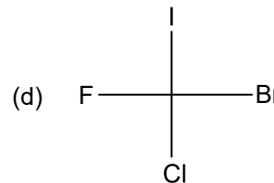
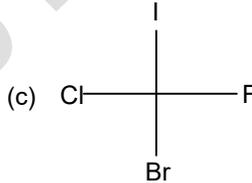
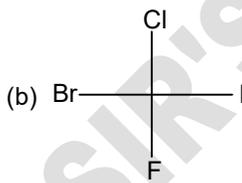
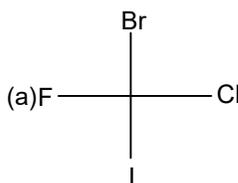
Q29. Ice and water are in equilibrium at 0°C and 1 atm pressure, the total pressure is suddenly reduced, what will happen?
 (a) Ice will melt (b) Water will freeze (c) Nothing happens (d) Can't predict

Q30. What is the pH of a 10⁻⁸M NaOH solution?
 (a) 8 (b) 6 (c) 7.03 (d) 6.97

Q31. What is the major product of reaction of 2-chlorobutane with alc.KOH ?
 (a) But-1-ene (b) But-2-ene (c) 2-butanol (d) Butan-1-ol

Q32. What is the pH of the solution obtained by mixing 0.4g of NaOH in 100 g water at 298K if the resulting solution has a density of 1.004g/ml?
 (a) 1 (b) 3 (c) 11 (d) 13

Q33. Which of the following has Rectus configuration?



SPACE FOR ROUGH WORK



- Q34.** Consider the following equilibrium $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$, starting with 2 moles of nitrogen and 4 moles of hydrogen in 1L of container at 300K, at equilibrium the moles of ammonia are double the moles of nitrogen. The value of K_p is
 (a) 4 (b) 50 (c) 100 (d) 1/4
- Q35.** A solution of Urea in water has a concentration of 2M and a density 1.12g/ml. What is its molal concentration?
 (a) 2m (b) 2.24m (c) 2.12m (d) 1.90m
- Q36.** Which of the following shows $-I > +M$
 (a) NO_2 (b) Cl (c) OH (d) COOH
- Q37.** When an alkene was ozonolysed the product was hexane-2,5-dione, the alkene is
 (a) 2,2-dimethylhex-3-ene (b) 1,2-dimethylcyclobutene
 (c) 1,3-dimethylcyclobutene (d) 1-methylcyclopentene
- Q38.** The compound capable of showing geometrical isomerism among the following is
 (a) 1-chlorobut-1-ene (b) 2-methylbut-2-ene
 (c) 1,2-dimethylcyclopropane (d) 1,1-dimethylcyclopropane
- Q39.** The most stable resonating structure in the following is
- (a)

(c)

(b)

(d)
- Q40.** In a closed system: $A_{(s)} \rightleftharpoons 2B_{(g)} + 3C_{(g)}$ If the partial pressure of C is doubled, then partial pressure of B will be:
 (a) Two times the original value (b) One – half of its original value
 (c) $\frac{1}{2\sqrt{2}}$ times the original value (d) $2\sqrt{2}$ times its original value
- Q41.** When 2g of a gas A is introduced into an evacuated flask kept at $25^\circ C$, the pressure is found to be 1 atm. If 3g of another gas B is then added to the same flask, the pressure becomes 1.5 atm. Assuming ideal gas behaviour, calculate the ratio of molecular masses $M_A : M_B$
 (a) 1 : 2 (b) 2 : 1 (c) 3 : 1 (d) 1 : 3

SPACE FOR ROUGH WORK



- Q42.** In XeF_2 , Xe is hybridized
 (a) sp (b) sp^2 (c) sp^3 (d) sp^3d
- Q43.** Had there been no such thing as 2s-2p mixing, which of them would be paramagnetic
 (a) B_2 (b) C_2 (c) N_2 (d) F_2
- Q44.** At certain temperature K_w for water 4.0×10^{-14} . Which of the following is wrong for pure water at this temperature? ($\log_{10}2=0.301$)
 (a) pH = 6.699; water is acidic (b) pH = 6.699 ; water is neutral
 (c) pOH = 6.699; water is neutral (d) pH + pOH = 13.398 ; water is neutral
- Q45.** What is the oxidation number of Cr in CrO_5 ?
 (a) +2 (b) +10 (c) +8 (d) +6
- Q46.** At constant volume, addition of helium to the reaction system:

$$\text{N}_{2(\text{g})} + 3\text{H}_{2(\text{g})} \rightleftharpoons 2\text{NH}_{3(\text{g})}$$

 (a) Favours the formation of ammonia (b) Reduces the formation of ammonia
 (c) Reduces the dissociation of ammonia (d) Does not affect the position of equilibrium
- Q47.** An organic compound contains 49.3% carbon, 6.84% hydrogen and its vapour density is 73. Empirical formula of the compound is
 (a) $\text{C}_3\text{H}_5\text{O}_2$ (b) $\text{C}_6\text{H}_{10}\text{O}_4$ (c) $\text{C}_3\text{H}_{10}\text{O}_2$ (d) $\text{C}_4\text{H}_{10}\text{O}_4$
- Q48.** 0.765 g of an acid gives 0.55 g of CO_2 and 0.18 g of H_2O . Then the ratio of the percentage of carbon and hydrogen is
 (a) 15 : 2 (b) 18 : 11 (c) 20 : 17 (d) 1 : 7
- Q49.** Formation of alkanes by action of Zn on alkyl halides is called
 (a) Frankland's reaction (b) Clemmenson's reaction
 (c) Wurtz's reaction (d) Kolbe's reaction
- Q50.** Which alkane cannot be created using Kolbe's electrolysis?
 (a) Ethane (b) Propane (c) Butane (d) Decane

SPACE FOR ROUGH WORK



BIOLOGY

- Q51.** Which of the following is not a function of the skeletal system?
(a) Production of erythrocytes (b) Storage of minerals
(c) Production of body heat (d) Locomotion
- Q52.** Choose the incorrect pair
(a) Facial bones - Made up of 14 skeletal elements
(b) Sacral vertebrae - 4 fused
(c) Vertebrochondral ribs-False ribs (8th, 9th, 10th)
(d) Pivot joint - Between atlas and axis
- Q53.** Which one of the following is not a disorder of bone?
(a) Arthritis (b) Osteoporosis (c) Rickets (d) Atherosclerosis
- Q54.** Gluconeogenesis, lipolysis and proteolysis processes are stimulated by
(a) Glucocorticoids (b) Mineralocorticoids (c) Both a and b (d) None of the above
- Q55.** Leydig cells produce
(a) Androgens (b) Estrogens (c) Aldosterone (d) Gonadotropins
- Q56.** The store house of calcium ions in the muscle fibre is
(a) Nucleus (b) Golgi body (c) Sarcoplasmic reticulum (d) Lysosomes
- Q57.** Match the following columns:

Column - I	Column - II
(A) Zona reticularis	(1) Outer layer (adrenal cortex)
(B) Zona fasciculata	(2) Inner layer (adrenal cortex)
(C) Zona glomerulosa	(3) Middle layer (adrenal cortex)

Codes

	A	B	C
(a)	3	2	1
(b)	1	2	3
(c)	2	3	1
(d)	2	1	3

SPACE FOR ROUGH WORK



- Q58.** Neural canal is
 (a) Solid portion of vertebrae through which the spinal cord passes
 (b) Hollow portion of vertebrae through which the spinal cord passes
 (c) Both a and b
 (d) None of the above

- Q59.** Select the right match of endocrine gland and their hormones among the options given below.

Column - I	Column - II
(A) Pineal	(1) Epinephrine
(B) Thyroid	(2) Melatonin
(C) Ovary	(3) Estrogen
(D) Adrenal medulla	(4) Tetraiodothyronine

Codes

	A	B	C	D
(a)	4	2	1	3
(b)	2	4	1	3
(c)	3	2	1	4
(d)	2	4	3	1

- Q60.** Match the following columns.

Column - I	Column - II
(A) External layer of eyeball	(1) Choroid
(B) Inner layer of eyeball	(2) Orbit
(C) Middle layer of eyeball	(3) Sclera
(D) Socket of the skull	(4) Retina

Codes

	A	B	C	D
(a)	1	2	4	3
(b)	2	1	3	4
(c)	3	4	1	2
(d)	4	3	2	1

SPACE FOR ROUGH WORK



- Q61.** Micturition reflex is a neural mechanism to
 (a) Release sweat (b) Formation of urine
 (c) Release urine (d) Release inorganic substance to the urine
- Q62.** In Juxta-medullary nephrons,
 (a) Vase recta is prominent (b) Loop of Henle is long
 (c) Loop of Henle runs deep into the medulla (d) All of the above
- Q63.** Order of toxicity among ammonia, urea and uric acid (from lower to higher) is
 (a) uric acid < urea < ammonia (b) uric acid < ammonia < urea
 (c) urea < uric acid < ammonia (d) ammonia < urea < uric acid
- Q64.** Excretion of nitrogenous products in the semisolid form is performed by
 (a) Ammonotelic organisms (b) Ureotelic organisms
 (c) Uricotelic organisms (d) All of the above
- Q65.** Which of the following is true for electrical synapses?
 (a) Pre and post synaptic membranes are in close proximity
 (b) Current can flow directly from one neuron into the other
 (c) Impulse conduction is faster
 (d) All of these
- Q66.** I. Excess loss of water from body II. Hypothalamus
 III. Osmoreceptors IV. ADH
 V. Neurohypophysis VI. Water reabsorption from DCT and Collecting ducts.
 VII. Prevention of diuresis
 Arrange the given processes in correct sequence for regulation in kidney.
 (a) I → II → III → IV → V → VI → VII (b) VII → VI → V → IV → III → II → I
 (c) I → III → II → V → IV → VI → VII (d) I → III → II → IV → V → VII → VI
- Q67.** The correct sequence of meninges from inner to outer side is
 (a) Piameter → Arachnoid mater → Dura mater
 (b) Arachnoid mater → Duramater → Pia mater
 (c) Duramater → Arachnoid mater → Pia mater
 (d) Duramater → Piamater → Arachnoid mater
- Q68.** Which one of the following statements is true?
 (a) Head of humerus bone articulates with acetabulum of pectoral girdle
 (b) Head of humerus bone articulates with glenoid cavity of pectoral girdle
 (c) Head of humerus bone articulates with a cavity called acetabulum of pelvic girdle
 (d) Head of humerus bone articulates with a glenoid cavity of pelvic girdle

SPACE FOR ROUGH WORK



- Q69.** The function of our visceral organs is controlled by
(a) Sympathetic and somatic neural system
(b) Sympathetic and parasympathetic neural system
(c) Central and somatic nervous system
(d) None of the above
- Q70.** Which one of the following is oviparous?
(a) *Ornithorhynchus* (b) Flying fox (bat) (c) Elephant (d) Whale
- Q71.** The second heart sound (dub) is associated with the closure of
(a) Tricuspid valve (b) Semilunar valve (c) Bicuspid valve (d) Tricuspid and bicuspid valve
- Q72.** Which one of the following blood cells is involved in antibody production?
(a) B-lymphocytes (b) T-lymphocytes (c) RBC (d) Neutrophils
- Q73.** One of the common symptoms observed in people infected with dengue fever is
(a) Significant decrease in RBCs count (b) Significant decrease in WBC count
(c) Significant decrease in platelets count (d) Significant increase in platelets count
- Q74.** Birds and mammals share one of the following characteristics as a common feature.
(a) Pigmented skin (b) Pneumatic bones (c) Viviparity (d) Warm-blooded body
- Q75.** The second largest number of species containing phylum in the animal kingdom is
(a) Annelida (b) Arthropoda (c) Mollusca (d) Chordata
- Q76.** Given below is the scientific name of mango, identify the correctly written name.
(a) *Mangifera Indica* (b) *Mangifera indica* (c) *mangifera Indica* (d) *mangifera indica*
- Q77.** The blood pumped by the ...A... ventricle enters theb....artery, whereas the ...C.... ventricle pumps blood into theD....
Choose the correct option for A, B, C and D.
(a) A-right, B-pulmonary, C-left, D-aorta (b) a-left, B-pulmonary, C-right, D-aorta
(c) A-left, B-pulmonary, C-right, D-vena cava (d) A-right, B-pulmonary, C-left, D-vena cava
- Q78.** Hepatic portal system is a
(a) Vascular connection between the digestive tract and liver
(b) Vascular connection between the liver and lungs
(c) Vascular connection between the spleen and liver
(d) Vascular connection between the digestive tract and spleen

SPACE FOR ROUGH WORK



- Q79.** Erythroblastosis foetalis is caused when fertilization takes place between gametes of
 (a) Rh⁻ female and Rh⁺ male (b) Rh⁻ male and Rh⁺ female
 (c) Rh⁻ female and Rh⁻ male (d) Rh⁺ female and Rh⁺ male
- Q80.** Which enzyme is present in human saliva?
 (a) Ptyalin (b) Pepsin (c) Enterokinase (d) Maltase
- Q81.** Common bile duct is formed by the fusion of
 (a) Pancreatic duct and cystic duct (b) Pancreatic duct and hepatic duct
 (c) Pancreatic duct, hepatic duct and cystic duct (d) Hepatic duct and cystic duct
- Q82.** Match the following columns:

Column - I	Column - II
(A) Lipase	(1) Dipeptides
(B) Nuclease	(2) Fats
(C) Carboxypeptidase	(3) Nucleic acids
(D) Dipeptidases	(4) Proteins, peptones and proteoses

Codes

	A	B	C	D
(a)	2	3	1	4
(b)	3	4	2	1
(c)	3	1	4	2
(d)	2	3	4	1

- Q83.** Which one of the following disorder is not associated with digestive system.
 (a) Tetanus (b) Diarrhoea (c) Jaundice (d) Dysentery
- Q84.** Match the following columns.

Column - I	Column - II
(A) Neck cells	(1) HCl, intrinsic factor
(B) Peptic/Chief cells	(2) Mucus
(C) Parietal/Oxyntic cells	(3) Pepsinogen
(D) Hepatocyte	(4) Bile

Codes

	A	B	C	D
(a)	2	3	1	4
(b)	3	2	1	4
(c)	4	2	3	1
(d)	2	4	3	1

SPACE FOR ROUGH WORK



- Q85.** During the propagation of a nerve impulse, the action potential results from the movement of
 (a) K^+ ions from intracellular fluid to extracellular fluid
 (b) Na^+ ions from extracellular fluid to intracellular fluid
 (c) K^+ ions from extracellular fluid to extracellular fluid
 (d) Na^+ ions from intracellular fluid to extracellular fluid
- Q86.** At the level of which thoracic vertebra does trachea divide into right and left primary bronchi?
 (a) 5 (b) 6 (c) 9 (d) 4
- Q87.** The thoracic chamber is formed dorsally by the ...A..., ventrally by the ...B..., laterally by the ...C... and on lower side by the dome-shaped ...D... . Select the right choices for A, B, C and D to complete the given statement.
 (a) A-vertebral column, B-sternum, C-ribs, D-diaphragm
 (b) A-vertebral column, B-ribs, C-sternum, D-diaphragm
 (c) A-diaphragm, B-ribs, C-sternum, D-vertebral column
 (d) A-ribs, B-diaphragm, C-sternum, D-vertebral column
- Q88.** What is a tonoplast?
 (a) Outer membrane of mitochondria
 (b) Inner membrane of chloroplast
 (c) Membrane boundary of the vacuole of plant cells
 (d) Cell membrane of a plant cell
- Q89.** Total lung capacity is
 (a) Total volume of air accommodated in lungs at the end of forced inspiration
 (b) $RV + ERV + TV + IRV$
 (c) Vital capacity + Residual volume
 (d) All of the above
- Q90.** Partial pressure of O_2 and CO_2 in atmospheric air compared to those in alveolar air is
- | | pO_2 | pCO_2 |
|-----|--------|---------|
| (a) | Higher | Lower |
| (b) | Higher | Higher |
| (c) | Lower | Lower |
| (d) | Lower | Higher |
- Q91.** Which of the following has no free aldehyde or ketone group ?
 (a) Sucrose (b) Maltose (c) Fructose (d) Galactose

SPACE FOR ROUGH WORK



- Q92.** Which of the following tissue has a free surface, which faces either a body fluid or the outside environment ?
 (a) Muscular tissue (b) Connective tissue (c) Neural tissue (d) Epithelial tissue
- Q93.** The main function of lacteals in the villi of small intestine is the absorption of
 (a) Amino acids and glucose (b) Glucose and vitamins
 (c) Water and mineral salts (d) Fatty acids and glycerol
- Q94.** Which class of enzymes is responsible for linking of two substrates?
 (a) Lyases (b) Isomerases (c) Ligases (d) Hydrolases
- Q95.** Bicarbonate ions are produced inside :
 (a) Lymphocytes (b) Erythrocytes (c) Neutrophils (d) Plasma
- Q96.** Oxygen haemoglobin dissociation curve will shift to right on decrease of :
 (a) Acidity (b) Carbon dioxide concentration
 (c) Temperature (d) pH
- Q97.** Tendons and ligaments are the example of :
 (a) Areolar connective tissue (b) Adipose tissue
 (c) Dense regular connective tissue (d) Loose connective tissue
- Q98.** In cockroach mouth parts consists of a labrum, a pair of mandibles, a pair of maxillae and a labium. Labrum and labium act as :
 (a) Upper and lower jaws respectively (b) Lower and upper jaws respectively
 (c) Lower and upper lips respectively (d) Upper and lower lips respectively
- Q99.** Match the following columns.

Column-I	Column-II
(A) Lysosomes	(1) Protein synthesis
(B) Ribosomes	(2) Hydrolytic activity
(C) Smooth endoplasmic reticulum	(3) Steroid synthesis
(D) Centriole	(4) Formation of spindle

Codes

	A	B	C	D
(a)	2	1	3	4
(b)	1	3	4	2
(c)	1	4	3	2
(d)	4	3	1	2

- Q100.** Who proposed the fluid mosaic model of plasma membrane?
 (a) Camillo Golgi (b) Schleiden and Schwann (c) Singer and Nicolson (d) Robert Brown

SPACE FOR ROUGH WORK



ANSWERS KEY

Class: 11th Moving 12th (Medical)

1 B	2 C	3 C	4 C	5 C	6 A	7 D	8 A	9 C	10 C
11 C	12 D	13 B	14 B	15 D	16 C	17 D	18 A	19 D	20 D
21 B	22 C	23 A	24 C	25 C	26 A	27 C	28 A	29 B	30 C
31 B	32 D	33 B	34 C	35 A	36 B	37 B	38 C	39 D	40 C
41 D	42 D	43 B	44 D	45 D	46 D	47 A	48 A	49 A	50 B
51 C	52 B	53 D	54 A	55 A	56 C	57 C	58 B	59 D	60 C
61 C	62 D	63 A	64 C	65 D	66 C	67 A	68 B	69 B	70 A
71 B	72 A	73 C	74 D	75 C	76 B	77 A	78 A	79 A	80 A
81 D	82 D	83 A	84 A	85 B	86 A	87 A	88 C	89 D	90 A
91 A	92 D	93 D	94 C	95 B	96 D	97 C	98 D	99 A	100 C

