

# **MENIIT**

**NEET | IIT-JEE | FOUNDATION**

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## **ADMISSION TEST (NEET)**

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## **SAMPLE PAPER Set-1**

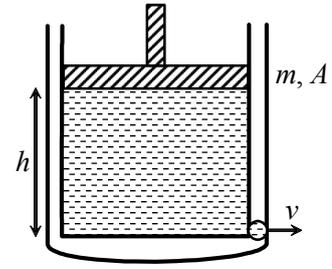
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**COURSE : XII Pass  
(One Year Medical)**

## PHYSICS

1. In an experiment, refractive index of glass was observed to be 1.45, 1.56, 1.54, 1.44, 1.54 and 1.53. The mean absolute error in the experiment is  
 (A)  $\pm 0.04$                       (B) 0.02                      (C)  $-0.03$                       (D)  $\pm 0.01$
2. Two particles are projected from the same point on ground simultaneously with speeds 20 m/s and  $20/\sqrt{3}$  m/s at angles  $30^\circ$  and  $60^\circ$  with the horizontal in the same direction. The distance between them when first particle strikes the ground is approximately ( $g = 10 \text{ m/s}^2$ )  
 (A) 23.1 m                      (B) 16.4 m                      (C) 30.2 m                      (D) 10.4 m
3. An elevator accelerates upward at a constant rate. A uniform string of length  $L$  and mass  $m$  supports a small block of mass  $M$  that hangs from the ceiling of the elevator. The tension at distance  $l$  from the ceiling is  $T$ . The acceleration of the elevator is  
 (A)  $\frac{T}{M+m-ml/L} - g$                       (B)  $\frac{T}{2M+m-ml/L} + g$   
 (C)  $\frac{T}{M+ml/L} - g$                       (D)  $\frac{T}{2M-m+ml/L} - g$
4. A body is displaced from (0, 0) to (1 m, 1 m) along the path  $x = y$  by a force  $\vec{F} = (x^2\hat{j} + y\hat{i})N$ . The work done by this force will be  
 (A)  $\frac{4}{3}$  J                      (B)  $\frac{5}{6}$  J                      (C)  $\frac{3}{2}$  J                      (D)  $\frac{7}{5}$  J
5. A gun fires a shell and recoils horizontally. If the shell travels along the barrel with speed  $v$ , the ratio of speed with which the gun recoils if (i) the barrel is horizontal (ii) inclined at an angle of  $30^\circ$  with horizontal is  
 (A) 1                      (B)  $\frac{2}{\sqrt{3}}$                       (C)  $\frac{\sqrt{3}}{2}$                       (D)  $\frac{1}{2}$
6. A solid sphere and a hollow sphere of equal mass and radius are placed over a rough horizontal surface after rotating it about its centre of mass with same angular velocity  $\omega_0$ . Once the pure rolling starts let  $v_1$  and  $v_2$  be the linear speeds of their center of mass, respectively. Then  
 (A)  $v_1 = v_2$                       (B)  $v_1 > v_2$                       (C)  $v_1 < v_2$                       (D) data is insufficient
7. The radius of a planet is  $R$ . A satellite revolves around it in a circle of radius  $r$  with angular speed  $\omega$ . The acceleration due to gravity on planet's surface is  
 (A)  $\frac{r^3\omega}{R}$                       (B)  $\frac{r^2\omega^3}{R}$                       (C)  $\frac{r^3\omega^2}{R^2}$                       (D)  $\frac{r^2\omega^2}{R}$
8. The angular frequency of a spring block system is  $\omega_0$ . This system is suspended from the ceiling of an elevator moving downwards with a constant speed  $v_0$ . The block is at rest relative to the elevator. Lift is suddenly stopped. Assuming the downward as a positive direction, choose the wrong statement  
 (A) the amplitude of the block is  $\frac{v_0}{\omega_0}$                       (B) the initial phase of the block is  $\pi$   
 (C) the equation of motion for the block is  $\frac{v_0}{\omega_0} \sin \omega_0 t$                       (D) the maximum speed of the block is  $v_0$

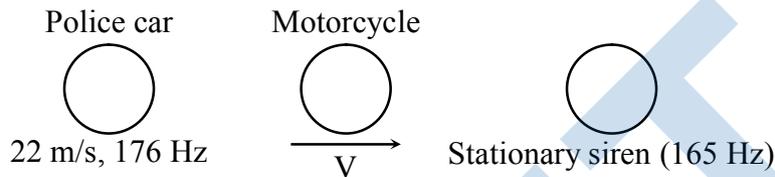
9. A cylindrical vessel contains a liquid of density  $\rho$  upto a height  $h$ . The liquid is closed by a piston of mass  $m$  and area of cross-section  $A$ . There is a small hole at the bottom of the vessel. The speed  $v$  with which the liquid comes out of the hole is



(A)  $\sqrt{2gh}$  (B)  $\sqrt{2\left(gh + \frac{mg}{\rho A}\right)}$

(C)  $\sqrt{2\left(gh + \frac{mg}{A}\right)}$  (D)  $\sqrt{2gh + \frac{mg}{\rho A}}$

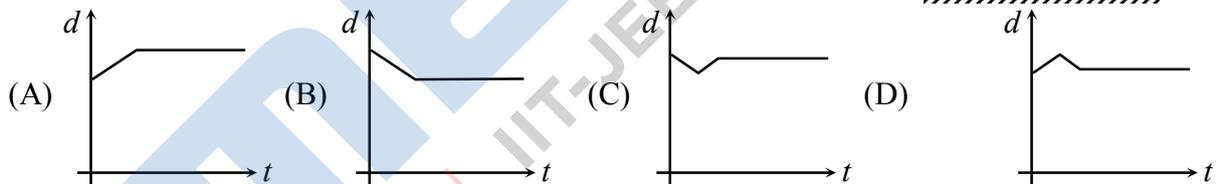
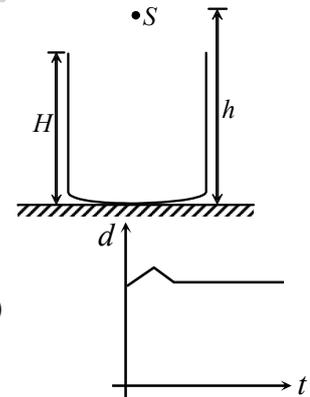
10. A police car moving at 22 m/s chases a motorcyclist. The police man sounds his horn at 176 Hz, while both of them move towards a stationary siren of frequency 165 Hz. Calculate the speed of the motorcycle if it is given that the motorcyclist does not observe any beats (speed of sound 330 m/s)



- (A) 33 m/s (B) 22 m/s (C) zero (D) 11 m/s

11. A monatomic gas undergoes a process given by  $2dU + 3dW = 0$ , then the process is  
(A) isobaric (B) adiabatic (C) isothermal (D) none of these

12. A point source  $S$  is placed at a height  $h$  from the bottom of a vessel of height  $H (< h)$ . The vessel is polished at the base. Water is gradually filled in the vessel at a constant rate  $\alpha \text{ m}^3/\text{s}$ . The distance  $d$  of image of the source from the bottom of the vessel varies with time  $t$  as



13. In the ideal double-slit experiment, when a glass-plate (refractive index 1.5) of thickness  $t$  is introduced in the path of one of the interfering beams (wavelength  $\lambda$ ), the intensity at the position where the central maximum occurred previously remains unchanged. The minimum thickness of the glass-plate is

(A)  $2\lambda$  (B)  $\frac{2\lambda}{3}$  (C)  $\frac{\lambda}{3}$  (D)  $\lambda$

14. Time constant of a C-R circuit is  $\frac{2}{\ln(2)}$  s. Capacitor starts discharging at time  $t = 0$ . The ratio of charge on the capacitor at time  $t = 2$  s and  $t = 6$  s is  
(A) 3: 1 (B) 8: 1 (C) 4: 1 (D) 2: 1

15. Capacity of an isolated sphere is increased  $n$  times when it is enclosed by an earthed concentric sphere. The ratio of their radii is

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

16. The speed of a body moving on a straight track varies according to  $v = 2t + 13$  for  $0 \leq t \leq 5$  s,  $v = 3t + 8$  for  $5 < t \leq 7$  s and  $v = 4t + 1$  for  $t > 7$  s. The distances are measured in metre. The distance in meters moved by the particle at the end of 10 second is  
(A) 127 (B) 247 (C) 186 (D) 313
17. Two identical coaxial circular loops carry a current  $i$  each circulating in the same direction. If the loops approach each other  
(A) the current in each loop will decrease  
(B) the current in each loop will increase  
(C) the current in each loop will remain the same  
(D) the current in one loop will increase and in the other loop will decrease
18. A radioactive substance is being produced at a constant rate of 200 nuclei/s. The decay constant of the substance is  $1 \text{ s}^{-1}$ . After what time the number of radioactive nuclei will become 100. Initially there are no nuclei present?  
(A) 1 s (B)  $\frac{1}{\ln(2)}$  s (C)  $\ln(2)$  s (D) 2 s
19. The angular momentum of an electron in the hydrogen atom is  $\frac{3h}{2\pi}$ . Here,  $h$  is Planck's constant. The kinetic energy of this electron is  
(A) 4.35 eV (B) 1.51 eV (C) 3.4 eV (D) 6.8 eV
20. In X-ray tube when the accelerating voltage  $V$  is halved, the difference between the wavelengths of  $K_{\alpha}$  line and minimum wavelength of continuous X-ray spectrum  
(A) remains constant (B) becomes more than two times  
(C) becomes half (D) becomes less than two times
21. In a  $p$ - $n$  junction diode not connected to any circuit  
(A) the potential is the same everywhere  
(B) the  $p$ -type side is at a higher potential than the  $n$ -type side  
(C) there is an electric field at the junction directed from the  $n$ -type side to the  $p$ -type side  
(D) there is an electric field at the junction directed from the  $p$ -type side to the  $n$ -type side
22. Optic axis of a thin equiconvex lens is the  $x$ -axis. The co-ordinates of a point object and its image are  $(-40 \text{ cm}, 1 \text{ cm})$  and  $(50 \text{ cm}, -2 \text{ cm})$  respectively. Lens is located at  
(A)  $x = +20 \text{ cm}$  (B)  $x = -30 \text{ cm}$  (C)  $x = -10 \text{ cm}$  (D) origin
23. Two identical conducting rods are first connected independently to two vessels, one containing water at  $100^{\circ}\text{C}$  and the other containing ice at  $0^{\circ}\text{C}$ . In the second case, the rods are joined end to end and connected to the same vessels. Let  $q_1$  and  $q_2$  be the rate of melting (mass per unit time) of ice in the two cases respectively. The ratio  $\frac{q_1}{q_2}$  is

- (A)  $\frac{1}{2}$                       (B)  $\frac{2}{1}$                       (C)  $\frac{4}{1}$                       (D)  $\frac{1}{4}$

24. A transistor is used in the common emitter mode as an amplifier. Then

- (A) the input signal is connected in parallel with the voltage applied to bias the base-collector junction  
 (B) the base-emitter junction is reverse-biased  
 (C) the input signal is connected in series with the voltage applied to bias the base-emitter junction  
 (D) the input signal is connected in series with the voltage applied to bias the base-collector junction

25. A coil has an inductance of 0.7 H and is joined in series with a resistance of 220  $\Omega$ . When an alternating voltage of 220 V, 50 Hz is applied to it. Then the power factor is

- (A)  $\frac{1}{\sqrt{2}}$                       (B)  $\frac{1}{3}$                       (C)  $\frac{1}{5}$                       (D)  $\frac{1}{8}$

26. A force  $F$  acting on a body depends on its displacement  $x$  as  $F \propto x^n$ . The power delivered by  $F$  will be independent of  $x$  if  $n$  is

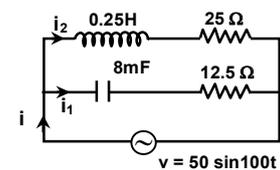
- (A)  $\frac{1}{3}$                       (B)  $-\frac{1}{3}$                       (C)  $\frac{1}{2}$                       (D)  $-\frac{1}{2}$

27. A beam of light of wavelength 600 nm from a distant source fall on a single slit 1.00 mm wide and the resulting diffraction pattern is observed on a screen 2m away. The distance between the first dark fringes on either side of the central bright fringe is

- (A) 1.2 cm                      (B) 1.2 mm                      (C) 2.4 cm                      (D) 2.4 mm

28. An A.C. circuit is shown in the figure. What is the rms current  $i_2$ ?

- (A) 1.4A                      (B) 1A  
 (C) 2A                      (D) 2.8A



29. The energy spectrum of  $\beta$ -particles [number  $N(E)$  as a function of  $\beta$ -energy  $E$ ] emitted from a radioactive source is

- (A)                      (B)                      (C)                      (D)

30. A short-circuited coil is placed in a time-varying magnetic field. Electrical power is dissipated due to the current induced in the coil. If the number of turns were to be quadrupled and the wire radius halved, then find the ratio of the electrical power dissipated in the second case to the first case is

- (A) 0.25                      (B) 1                      (C) 4                      (D) 2

**CHEMISTRY**

31. Starting a reaction

$\text{Cl}_2 + \text{S}_2\text{O}_3^{2-} \longrightarrow \text{SO}_4^{2-} + \text{Cl}^-$  in alkaline medium by taking 0.15 mole  $\text{Cl}_2$ , 0.02 mole of  $\text{S}_2\text{O}_3^{2-}$  and 0.3 mole of  $\text{OH}^-$  ions. How many  $\text{OH}^-$  are left after completion of reaction?

- (A) 0.1 mole (B) 0.15 mole  
(C) 0.2 mole (D) 0.28 mole

32. Two particles A and B are in motion. If wavelength of A is  $5 \times 10^{-8} \text{ m}$ , what will be the wavelength of B so that its momentum is triple that of A.

- (A)  $5 \times 10^{-8} \text{ m}$  (B)  $1.66 \times 10^{-8} \text{ m}$   
(C)  $4 \times 10^{-8} \text{ m}$  (D)  $3.5 \times 10^{-8} \text{ m}$

33. Of the following species, the one having planar structure is

- (A)  $\text{ClO}_4^-$  (B)  $\text{IF}_4^+$   
(C)  $\text{ICl}_4^-$  (D)  $\text{SCl}_4$

34. Hybridization of Cu in  $[\text{Cu}(\text{NH}_3)_4]^{2+}$  is

- (A)  $sp^3$  (B)  $dsp^2$   
(C)  $sp^2$  (D)  $sp^3d$

35. Curd is an example of

- (A) Gel (B) Emulsion  
(C) Foam (D) Sol

36. Synthesis of cDNA requires the enzyme

- (A) RNA dependent DNA polymerase  
(B) DNA dependent DNA polymerase  
(C) DNA polymerase – III  
(D) Reverse transcriptase

37. The reduction potential of a hydrogen electrode ( $P_{\text{H}_2} = 1 \text{ atm}$ ,  $C_{[\text{H}^+]} = 0.1 \text{ M}$ ) at  $25^\circ\text{C}$  will be

- (A)  $-0.59 \text{ V}$  (B)  $-0.48 \text{ V}$   
(C)  $-0.059 \text{ V}$  (D)  $0.00 \text{ V}$

38. Thermal stability of

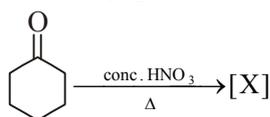
$\text{K}_2\text{CO}_3$ ,  $\text{MgCO}_3$ ,  $\text{CaCO}_3$  and  $\text{BeCO}_3$  is

- (A)  $A < B < C < D$  (B)  $D < B < C < A$   
(C)  $D < B < A < C$  (D)  $B < D < C < A$

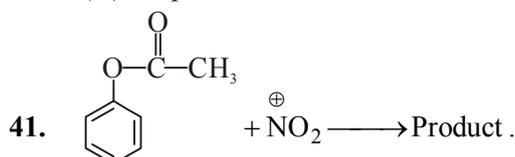
39. Depression of freezing point of 0.01 molal aqueous  $\text{CH}_3\text{COOH}$  solution is  $0.02046^\circ\text{C}$ . 1 molal urea solution freezes at  $-1.86^\circ\text{C}$ . Assuming molality equal to molarity, pH of  $\text{CH}_3\text{COOH}$  solution is:

- (A) 2 (B) 3  
(C) 3.2 (D) 4.2

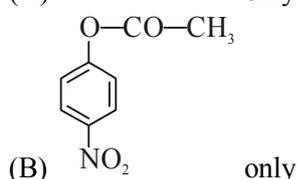
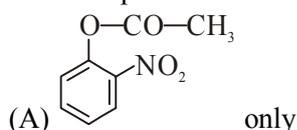
40. Product [X] in the following reaction will be



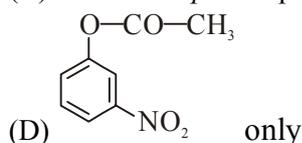
- (A) Hexane-1, 6-dioic acid  
(B) Butane-1, 4-dioic acid  
(C) Hexanoic acid  
(D) Propanoic acid



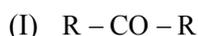
Probable product obtained for the reaction will be



(C) Both *o* and *p* nitro phenyl ethanoate



42. Arrange the following compounds according to decreasing order of reactivity towards nucleophilic addition reaction,



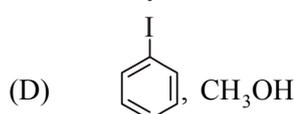
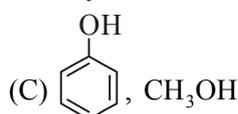
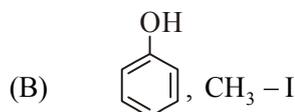
(A)  $\text{I} > \text{II} > \text{III} > \text{IV}$

(B)  $\text{II} > \text{I} > \text{III} > \text{IV}$

(C)  $\text{III} > \text{I} > \text{II} > \text{IV}$

(D)  $\text{II} > \text{IV} > \text{III} > \text{I}$

43. Anisole on treatment with HI gives:



44. What is the solubility product of Mercury (I) Chloride, if the solubility of salt in saturated solution is  $5.7 \times 10^{-7}$  moles/litre?

(A)  $3.25 \times 10^{-13}$

(B)  $3.25 \times 10^{-15}$

(C)  $3.75 \times 10^{-15}$

(D)  $7.4 \times 10^{-19}$

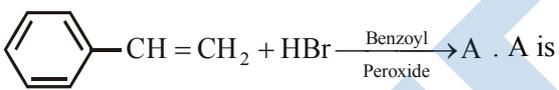
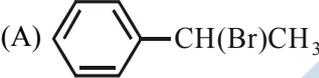
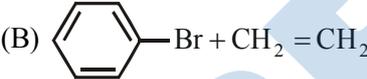
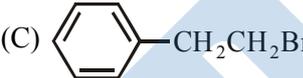
45. When a lead storage battery is discharged:

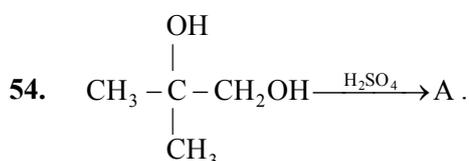
(A)  $\text{SO}_2$  is evolved

(B) Lead sulphate is consumed

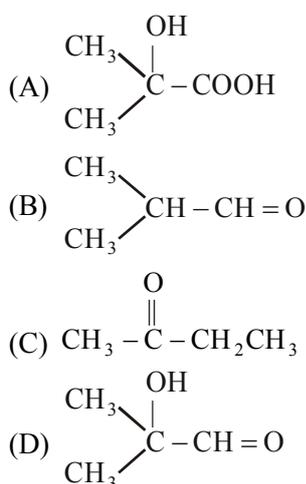
(C) Lead is formed

(D) Sulphuric acid is consumed

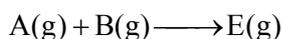
46. The packing fraction for a body centred cubic unit cell is:  
 (A) 0.74 (B) 0.76  
 (C) 0.68 (D) 0.86
47. When borax is heated in a Platinum loop, the transparent bead formed contains:  
 (A)  $\text{NaBO}_3 + \text{B}_2\text{O}_5$  (B)  $\text{Na}_2\text{O}_2 + \text{B}_2\text{O}_3$   
 (C)  $\text{NaBO}_2 + \text{H}_3\text{BO}_3$  (D)  $\text{NaBO}_2 + \text{B}_2\text{O}_3$
48. Which one of the following oxides of Nitrogen is called mixed anhydride?  
 (A) NO (B)  $\text{NO}_2$   
 (C)  $\text{N}_2\text{O}_4$  (D)  $\text{N}_2\text{O}_5$
49. In  $\text{P}_4\text{O}_6$ , the number of oxygen atoms bonded to each phosphorus atom is  
 (A) 1.5 (B) 2  
 (C) 3 (D) 4
50. A monoprotic acid in 0.1 M aqueous solution ionizes only to 0.001%. The value of ionization constant of the acid is  
 (A)  $1 \times 10^{-11}$  (B)  $1 \times 10^{-5}$   
 (C)  $1 \times 10^{-6}$  (D)  $1 \times 10^{-3}$
51.   $\text{C}_6\text{H}_5\text{CH}=\text{CH}_2 + \text{HBr} \xrightarrow{\text{Benzoyl Peroxide}} \text{A}$ . A is  
 (A)   $\text{C}_6\text{H}_5\text{CH}(\text{Br})\text{CH}_3$   
 (B)   $\text{C}_6\text{H}_5\text{CH}=\text{CH}_2 + \text{HBr}$   
 (C)   $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{Br}$   
 (D)   $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_3$
52. Which one of the following is not present in RNA?  
 (A) Thymine (B) Ribose  
 (C) Uracil (D) Phosphate
53. Which one of the following products obtained from chloroform has its application as a war gas  
 (A) Lewisite (B) Chloretone  
 (C) Chloropicrin (D) Paraldehyde



The product A obtained in the above reaction is,



55. For the reaction at 298 K



$$\Delta E = -3.00 \text{ Kcal}; \Delta S = -10.0 \text{ Cal/K}$$

The value for  $\Delta G$  should be nearly

- (A) - 612 Kcal  
(B) - 306 cal  
(C) - 612 cal  
(D) - 6576 cal

56. Which of these is an addition homopolymer?

- (A) Polystyrene  
(B) Bakelite  
(C) Nylon-66  
(D) Melamine

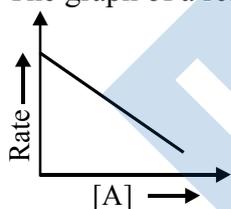
57.  $\text{CuSO}_4$  reacts with KCN solution to form

- (A)  $\text{Cu}_2(\text{CN})_2$   
(B)  $\text{Cu}(\text{CN})_2$   
(C)  $\text{K}_3[\text{Cu}(\text{CN})_4]$   
(D)  $\text{K}_4[\text{Cu}(\text{CN})_6]$

58. 100 c.c. of N/10 NaOH solution is mixed with 100 c.c of N/5 HCl solution and the whole volume is made to 1 litre. The pH of the resulting solution will be

- (A) 1  
(B) 2  
(C) 3  
(D) 4

59. The graph of a reaction is



order with respect to A is

- (A) zero  
(B) 1  
(C) -1  
(D) 2

60. The rate of reaction is doubled for  $10^\circ\text{C}$  rise in temperature. The increase in reaction rate as a result of temperature rise from  $10^\circ\text{C}$  to  $100^\circ\text{C}$  is

- (A) 1024  
(B) 512  
(C) 64  
(D) 100

## BOTANY

61. Which one of the following genetic unit moves from one chromosome to another and causes genetic changes?
- (A) Muton (B) Replicon  
(C) Cistron (D) Transposon
62. Net gain of ATP from one molecule of glucose in glycolysis is
- (A) 3 (B) 4  
(C) 5 (D) 2
63. The primary reaction in photosynthesis is photochemical and takes place in the chloroplast. It is accomplished by a chain of electron carriers with phosphorylation of ADP to ATP. The actual site for this reaction is
- (A) intrathylakoid space  
(B) thylakoid membrane  
(C) chloroplast envelope  
(D) stroma
64. Chemiosmosis refers to the view that an ion flowing down its electrochemical gradient drives ATP synthesis. The ion in question is
- (A) phosphate (B) sodium  
(C) iron (D) hydrogen
65. What will be the ratio of offspring in a cross between the red coloured and pink coloured flowers of *Mirabilis jalapa*.
- (A) Red : Pink = 1 : 1 (B) Red : Pink = 3 : 1  
(C) Red : Pink = 1 : 3 (D) Red : Pink = 2 : 3
66. An important function of the synergids in the embryo sac is to
- (A) push the pollen tube into the egg  
(B) nourish the embryo  
(C) serve as the seat of pollen tube discharge  
(D) protect the egg from damage by the pollen tube
67. Arrange the following events of replication of DNA.
- I. Bonds between complementary bases breaks.
  - II. Bonds between complementary bases forms.
  - III. DNA molecules uncoils.
  - IV. Opposite strands separates.
  - V. Sugar phosphate bonds forms.
  - VI. Free nucleotides align with the complementary nucleotides on each strand.
- Choose the correct option.
- (A) VI → I → III → IV → V → II  
(B) III → VI → I → IV → V → II  
(C) I → III → VI → IV → II → V  
(D) III → I → IV → VI → II → V
68. The polar transport of auxin in stem segments involves the movement of auxin from the
- (A) morphological apex towards the base  
(B) base towards the morphological apex  
(C) morphological apex towards the lateral branches  
(D) base towards the lateral branches

69. A DNA molecule having  $A+T/C+G=0.71$  shows that the molecule is  
 (A) linear (B) circular  
 (C) single-stranded (D) double-stranded
70. Fruit and leaf drop at early stages can be prevented by the application of  
 (A) cytokinins (B) ethylene  
 (C) auxins (D) gibberellic acid

71. Match List I with List II and select the correct answer

List I	List II
A. Operator gene	(a) Provides a site for binding of activator proteins and RNA polymerase
B. Promoter gene	(b) Makes enzymes that control metabolism such as lactose in the cell.
C. Regulator gene	(c) Switches on cistron activity
D. Structural gene	(d) Synthesises molecule that blocks a gene adjacent to structural genes

Codes:

- | A       | B   | C   | D   |
|---------|-----|-----|-----|
| (A) (b) | (a) | (c) | (d) |
| (B) (c) | (a) | (d) | (b) |
| (C) (b) | (c) | (d) | (a) |
| (D) (c) | (d) | (a) | (b) |

72. Edible, freshwater algae would include  
 (A) *Porphyra* and *Chlorella*  
 (B) *Spirulina* and *Laminaria*  
 (C) *Microcystis* and *Chondrus*  
 (D) *Chlorella* and *Spirulina*
73. A much large fraction of energy flows in an aquatic ecosystem through  
 (A) grazing food chain (B) detritus food chain  
 (C) complex food chain (D) food web
74. Strength of the linkage between the two genes is  
 (A) proportionate to the distance between them  
 (B) inversely proportionate to the distance between them  
 (C) depend on the chromosomes  
 (D) depend upon the size of chromosomes
75. Identify the correct pair of mRNA type and its function.  
 (A) Messenger RNA — Provides the template  
 (B) Transfer RNA — Brings amino acids and reads genetic code  
 (C) Ribosomal RNA — Plays catalytic role during translation  
 (D) All of the above
76. A recently discovered anti-cancer drug is obtained from  
 (A) *Taxus* (B) *Tagetes*  
 (C) *Tamarix* (D) *Thea*
77. The age pyramid with broad base indicates  
 (A) high percentage of young individuals  
 (B) low percentage of young individuals  
 (C) high percentage of old individuals  
 (D) All of the above

78. The interdependent evolution of the flowering plants and pollinating insects together is known as  
 (A) mutualism (B) coevolution  
 (C) commensalism (D) cooperation
79. Placement of Gymnosperms between Dicotyledons and Monocotyledons is one of the drawbacks in the system of classification of  
 (A) Rendle  
 (B) Bentham and Hooker  
 (C) Engler and Prantl  
 (D) Linnaeus
80. Penicillin kills bacteria by  
 (A) suppression of cell-wall synthesis  
 (B) lysis of protoplasm  
 (C) interfering with RNA synthesis  
 (D) inhibiting DNA synthesis
81. Match List I with List II and select the correct answer.

List I (Families)	List II (Characters of gynoecium)
A. Compositae	(a) Bicarpellary, syncarpous and superior
B. Leguminosae	(b) Bicarpellary, syncarpous and inferior
C. Malvaceae	(c) Monocarpellary and superior
D. Cruciferae	(d) Syncarpous, superior with axile placentation

Codes:

- |         |     |     |     |
|---------|-----|-----|-----|
| A       | B   | C   | D   |
| (A) (b) | (c) | (d) | (a) |
| (B) (b) | (d) | (c) | (a) |
| (C) (d) | (a) | (b) | (d) |
| (D) (d) | (b) | (a) | (c) |

82. Match List I with List II and select the correct answer:

List I (Terms)	List II (Name of plant)
A. Hornwort	(a) <i>Lycopodium</i>
B. Liverwort	(b) <i>Riccocarpus</i>
C. Stonewort	(c) <i>Anthoceros</i>
D. Club moss	(d) <i>Chara</i>

Codes:

- |         |     |     |     |
|---------|-----|-----|-----|
| A       | B   | C   | D   |
| (A) (b) | (c) | (d) | (a) |
| (B) (b) | (c) | (a) | (d) |
| (C) (c) | (b) | (a) | (d) |
| (D) (c) | (b) | (d) | (a) |

83. Replication occurs within the small opening of DNA helix referred to as  
 (A) replication fork (B) duplication fork  
 (C) DNA fork (D) RNA fork

84. Which one of the following is commonly known as green mould?  
 (A) *Aspergillus* (B) *Pythium*  
 (C) *Mucor* (D) *Penicillium*
85. Which one of the following can be considered to be a dead mechanical tissue?  
 (A) Aerenchyma (B) Collenchyma  
 (C) Parenchyma (D) Sclerenchyma
86. Match List I (plants) with List II (presence of character in the plant body) and select the correct answer using the codes given below the lists:

List I	List II
A. <i>Riccia</i>	(a) Only smooth-walled unicellular rhizoids
B. <i>Marchantia</i>	(b) Multicellular rhizoids
C. <i>Anthoceros</i>	(c) Rhomboidal areas on dorsal surface
D. <i>Funaria</i>	(d) Dorsal groove along sagittal axis

**Codes:**

- |   |   |   |   |
|---|---|---|---|
| A | B | C | D |
|---|---|---|---|
- (A) (d) (b) (c) (a)  
 (B) (c) (d) (b) (a)  
 (C) (c) (d) (a) (b)  
 (D) (d) (c) (a) (b)
87. Which one of the following is endogenously produced?  
 (A) Ascospores (B) Basidiospores  
 (C) Conidiospores (D) Teleutospores
88. **A:** The Ti plasmid of *Agrobacterium tumefaciens* has been effectively used as a vector for gene transfer in plants.  
**R:** Ti plasmids carry sites for insertion of foreign gene intended to be transferred.  
 (A) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.  
 (B) Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.  
 (C) Assertion is correct but Reason is incorrect.  
 (D) Both Assertion and Reason are incorrect.
89. **A:** Anisogamy refers to maturation of male and female sex organs at different times.  
**R:** This is a safeguard against cross-pollination.  
 (A) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.  
 (B) Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.  
 (C) Assertion is correct but Reason is incorrect.  
 (D) Both Assertion and Reason are incorrect.
90. **A:** C<sub>4</sub> plants are “high efficiency” photosynthesizers.  
**R:** These plants have high levels of photosynthesis per unit of water lost.  
 (A) Both Assertion and Reason are correct and Reason is the correct explanation for Assertion.  
 (B) Both Assertion and Reason are correct but Reason is not the correct explanation for Assertion.  
 (C) Assertion is correct but Reason is incorrect.  
 (D) Both Assertion and Reason are incorrect.

## ZOOLOGY

91. Lactational amenorrhoea is due to high level of  
(A) FSH (B) LH  
(C) Prolactin (D) Gonadotropins
92. HIV is a member of group of viruses called  
(A) Retrovirus (B) Rhinovirus  
(C) Baculovirus (D) Nucleopolyhedrovirus
93. The kind of joint between the carpal and metacarpal of thumb is  
(A) Angular joint (B) Ellipsoid joint  
(C) Gliding joint (D) Saddle joint
94. Umbilical cord contains  
(A) 100% maternal blood  
(B) 75% maternal, 25% foetal blood  
(C) 100% foetal blood  
(D) 50% maternal, 50% foetal blood
95. Gigantism is a disorder related to  
(A) Bones (B) Pituitary  
(C) Hypothalamus (D) Pancreas
96. When a person breathes normally, then the amount of air which remains in the lung after normal expiration is  
(A) RV (B) ERV  
(C) ERV+RV (D) TV+ERV
97. Which of the following period is known as 'age of fishes'?  
(A) Cambrian (B) Ordovician  
(C) Silurian (D) Devonian
98. Mineralocorticoids are secreted by  
(A) Zona fasciculata (B) Zona reticularis  
(C) Zona glomerulosa (D) None of these
99. The longest cranial nerve is  
(A) Trigeminal (B) Hypoglossal  
(C) Vagus (D) Facial
100. Select the condition which is not related to hypersecretion of hormones.  
(A) Nodules in thyroid gland (B) Exophthalmic goiter  
(C) Acromegaly (D) Cretinism

- 101.** Bipolar neurons are found in the  
 (A) Cerebral cortex (B) Retina of eye  
 (C) Embryonic stage (D) Dorsal root ganglion of spinal cord
- 102.** Angiotensin converting enzyme (ACE) which converts angiotensin I into angiotensin II is secreted in  
 (A) Adrenal cortex (B) Adrenal medulla  
 (C) Liver (D) Lungs
- 103.** What percentage of blood constitutes the plasma?  
 (A) 45 per cent (B) 55 per cent  
 (C) 80 per cent (D) 20 per cent
- 104.** Pneumotaxic centre helps in controlling breathing. It is located in  
 (A) Medulla oblongata (B) Pons varolii  
 (C) Hypothalamus (D) Thalamus
- 105.** The elbow or knee joint is  
 (A) Hinge joint (B) Gliding joint  
 (C) Pivotal joint (D) Ball and socket joint
- 106.** The natural anticoagulant heparin is produced by  
 (A) Only basophils  
 (B) Only liver cells  
 (C) Liver cells and mast cells  
 (D) Basophils and macrophages
- 107.** Cross-section image of internal body structure can be obtained by using the following medical technique:  
 (A) NMR (B) EEG  
 (C) CAT (D) PET
- 108.** ATPase enzyme needed for muscle contraction is located in  
 (A) Actin (B) Actinin  
 (C) Myosin (D) Troponin
- 109.** Common name of Physalia is  
 (A) Obelia (B) Sea fur  
 (C) Sea anemone (D) Portuguese man of war
- 110.** Cornea of the eye is covered by  
 (A) Stratified cuboidal epithelium  
 (B) Stratified squamous epithelium  
 (C) Stratified squamous non-keratinized epithelium  
 (D) Pseudo-stratified epithelium
- 111.** (22+Y) is the genetic constitution observed in  
 (A) Spermatogonia (B) Primary spermatocytes  
 (C) Secondary spermatocytes (D) Primary oocyte

112. The hormone which is commonly secreted by both developing follicle and corpus luteum is:
- (A) Estrogen (B) Progesterone  
(C) LH (D) FSH
113. Spike in level of which hormone is indicator of ovulation?
- (A) hCG in urine (B) Estrogen  
(C) LH in urine (D) Progesterone
114. Which of the following is a hormone releasing Intra Uterine Device (IUD)?
- (A) LNG-20 (B) Lippe's loop  
(C) Cervical cap (D) Multiload 375
115. How many diseases from given in box below are caused by bacteria?
- |   |
|---|
| Malaria, Dengue, Polio, Chikungunya Tuberculosis, Small pox |
|---|
- (A) One (B) Two  
(C) Three (D) Four
116. Which one is not included in the category of physiological barriers to prevent microbial growth?
- (A) Tears from eyes (B) Saliva in the mouth  
(C) Acid in the stomach (D) Virus-infected cells secrete interferons
117. Which of the following pairs of nitrogenous bases of nucleic acids is mismatched with the category mentioned against it?
- (A) Adenine, Thymine – Purines  
(B) Thymine, Uracil – Pyrimidines  
(C) Uracil, Cytosine – Pyrimidines  
(D) Guanine, Adenine – Purines
118. Which of the following prevents collapsing of trachea?
- (A) Muscles (B) Diaphragm  
(C) Ribs (D) Cartilaginous rings
119. Recombination process occur between .....
- (A) Non sister chromatids of Homologous chromosomes  
(B) Sister chromatid of Homologous chromosome  
(C) Sister chromatids of non-homologous chromosomes  
(D) Non sister chromatids of Non-homologous chromosomes
120. Lysosomes bud off as vesicles from
- (A) Rough endoplasmic reticulum  
(B) *Cis-face* of Golgi apparatus  
(C) Median -face of Golgi apparatus  
(D) *Trans-face* of Golgi apparatus

★★★★★

**Answer Key [Sample Paper : NEET-XII Pass] SET-1**

1	(A)	31	(A)	61	(D)	91	(C)
2	(A)	32	(B)	62	(D)	92	(A)
3	(A)	33	(C)	63	(B)	93	(D)
4	(B)	34	(B)	64	(D)	94	(C)
5	(B)	35	(A)	65	(D)	95	(B)
6	(C)	36	(D)	66	(C)	96	(C)
7	(C)	37	(C)	67	(D)	97	(D)
8	(B)	38	(B)	68	(A)	98	(C)
9	(B)	39	(B)	69	(B)	99	(C)
10	(B)	40	(A)	70	(C)	100	(D)
11	(D)	41	(C)	71	(B)	101	(B)
12	(B)	42	(D)	72	(D)	102	(D)
13	(A)	43	(B)	73	(A)	103	(B)
14	(C)	44	(D)	74	(B)	104	(B)
15	(B)	45	(D)	75	(D)	105	(A)
16	(B)	46	(C)	76	(A)	106	(A)
17	(A)	47	(D)	77	(A)	107	(C)
18	(C)	48	(B)	78	(B)	108	(C)
19	(B)	49	(C)	79	(B)	109	(D)
20	(D)	50	(A)	80	(A)	110	(C)
21	(C)	51	(C)	81	(A)	111	(C)
22	(C)	52	(A)	82	(D)	112	(A)
23	(C)	53	(C)	83	(A)	113	(C)
24	(C)	54	(B)	84	(D)	114	(A)
25	(A)	55	(C)	85	(D)	115	(A)
26	(B)	56	(A)	86	(D)	116	(D)
27	(D)	57	(C)	87	(A)	117	(A)
28	(B)	58	(B)	88	(A)	118	(D)
29	(D)	59	(C)	89	(D)	119	(A)
30	(C)	60	(B)	90	(B)	120	(D)