

# NEET 2025 MOCK TEST-08

Time : 3.00Hrs

**180 MCQs PATTERN**

Max.Marks.720

## INSTRUCTIONS

1. This test will be a 3 hours Test, Maximum Marks 720M.
2. This test consists 180 questions of Physics, Chemistry and Biology. All questions are **COMPULSORY** to attempt.
3. Each question is of 4 marks.
4. There are three parts in the question paper, consisting Part-I Physics (Q.no.1 to 45), Part-II Chemistry (Q.no.46 to 90), Part-III Biology (Q. no. 91 to 180) .
5. There will be only one correct choice in the given four choices for each question. For each question 4 marks will be awarded for correct choice, 1 mark will be deducted for incorrect choice and zero mark will be awarded for unattempted question.
6. Any textual, printed or written material, mobile phones, calculator etc. is not allowed for the students appearing for the test.
7. All calculations / written work should be done in the rough sheet provided.

### Neet 2025 Test Paper

As per NTA 25/01/2025 Notification

180 QUESTIONS PATTERN & NMC NEET 2025 UPDATED SYLLABUS

## Syllabus

**Physics : CLASS XI & XII**

**Chemistry : CLASS XI & XII**

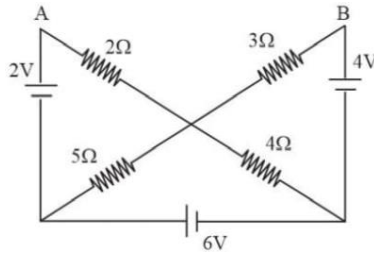
**Biology : CLASS XI & XII**



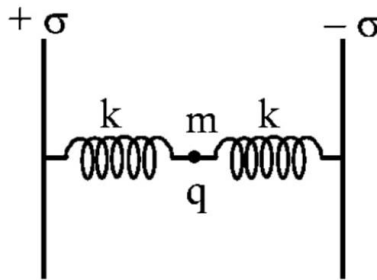
## PART-1 : PHYSICS

### PHYSICS

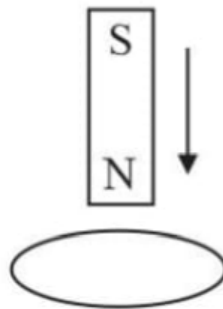
- If a ball is thrown vertically upwards with a speed  $u$ , the distance covered by it during the last  $t$  seconds of its ascent is
  - $ut$
  - $\frac{1}{2}gt^2$
  - $ut - \frac{1}{2}gt^2$
  - $(ut - gt)t$
- An ideal gas at  $27^\circ C$  is compressed adiabatically to  $\frac{8}{27}$  of its original volume. If  $\gamma = \frac{5}{3}$ , then the rise in temperature is
  - 450 K
  - 375 K
  - 675 K
  - 405 K
- An earthen pitcher loses 1 gm of water per minute due to evaporation. If the water equivalent of the pitcher is 0.5 kg and the pitcher contains 9.5 kg of water, then calculate the time required for the water in pitcher to cool to  $28^\circ C$  from its original temperature of  $30^\circ C$ . Neglect the effect of radiation. Latent heat of vaporization of water in this range of temperature is 580 cal/g and specific heat of water is 1 cal/g/ $^\circ C$ 
  - 30.5 min
  - 41.2 min
  - 38.6 min
  - 34.5 min
- The displacement  $x$  of a particle varies with time  $t$  as  $x = ae^{-\alpha t} + be^{\beta t}$ , where  $a, b, \alpha$  and  $\beta$  are positive constants. The velocity of the particle will
  - be independent of  $\beta$
  - drop to zero, when  $\alpha = \beta$
  - decrease with time
  - increase with time
- A cylindrical capacitor has charge  $Q$  and length  $L$ . If both the charge and the length of the capacitor are doubled by keeping the other parameters fixed, then the energy stored in the capacitor
  - remains same
  - increase two times
  - decrease two times
  - increase four times
- The count rate of a Geiger Muller counter for the radiation of a radioactive material of half-life 30 min decreases to  $5 s^{-1}$  after 2 h . The initial count rate was
  - $20 s^{-1}$
  - $25 s^{-1}$
  - $80 s^{-1}$
  - $625 s^{-1}$
- If a diamagnetic substance is brought near the north or the south pole of a bar magnet, it is
  - attracted by both poles
  - repelled by both poles
  - repelled by north pole but attracted towards south pole
  - attracted by north pole but repelled by south pole
- A ball is projected from the bottom of an inclined plane of inclination  $30^\circ$ , with a velocity of  $30 ms^{-1}$ , at an angle of  $30^\circ$  with the inclined plane. If  $g = 10 ms^{-2}$ , then the range of the ball on given inclined plane is
  - 12 m
  - 60 m
  - 120 m
  - 600 m
- The ratio of the acceleration due to gravity on two planets  $P_1$  and  $P_2$  is  $K_1$ . The ratio of their respective radii is  $K_2$ . The ratio of their respective escape velocities is
  - $\sqrt{K_1 K_2}$
  - $\sqrt{2K_1 K_2}$
  - $\sqrt{\frac{K_1}{K_2}}$
  - $\sqrt{\frac{K_2}{K_1}}$
- A body has equal amount of rotational kinetic energy and translation kinetic energy while rolling without slipping on a horizontal surface. Given body is an example of
  - disc
  - sphere
  - ring
  - cylinder
- The displacement from the position of equilibrium of a point 4cm from a source of sinusoidal oscillations is half the amplitude at the moment  $t=T/6$  ( $T$  is the time period). Assume that the source was at mean position at  $t=0$ . The wavelength of the running wave is
  - 0.96 m
  - 0.48 m
  - 0.24 m
  - 0.12 m
- Potential difference between point A and B (i.e.,  $V_A - V_B$ ) is



- 1) 2V                      2) 4V                      3) 6V                      4) 8V
13. Given that  $\vec{A} + \vec{B} + \vec{C} = 0$ . Out of three vectors, two are equal in magnitude and the magnitude of third vector is  $\sqrt{2}$  times that of either of the two having equal magnitude. Then the angle between vectors are given by
- 1)  $45^\circ, 45^\circ, 90^\circ$                       2)  $90^\circ, 135^\circ, 135^\circ$                       3)  $30^\circ, 60^\circ, 90^\circ$                       4)  $45^\circ, 60^\circ, 90^\circ$
14. Two large insulating plates having surface charge densities  $+\sigma$  and  $-\sigma$  are fixed at a distance  $d$  from each other. A small test charge  $q$  of mass  $m$  is attached to two identical springs as shown in the figure. The charge  $q$  is now released from rest with springs in natural length. Then  $q$  will (neglect gravity)



- 1) perform SHM with angular frequency  $\sqrt{\frac{k}{m}}$
- 2) perform SHM with amplitude  $\frac{\sigma q}{2k\epsilon_0}$
- 3) not perform SHM but will have a periodic motion
- 4) remain stationary
15. The north pole of a magnet is falling on a metallic ring as shown in the figure. The direction of induced current, if looked from upside in the ring will be



- 1) anti-clockwise                      2) clockwise
- 3) clockwise or anti-clockwise depending on radius of the ring
- 4) no induced current
16. There are two forces each having same magnitude 10N. One is inclined at an angle of  $30^\circ$  and other is inclined at an angle of  $135^\circ$  to the positive direction of x-axis. The x and y components of the resultant are
- 1)  $1.59 \text{ N } \hat{i}$  and  $12.07 \text{ N } \hat{j}$                       2)  $10 \text{ N } \hat{i}$  and  $10 \text{ N } \hat{j}$
- 3)  $1.59 \text{ N } \hat{i}$  and  $10 \text{ N } \hat{j}$                       4)  $1.59 \text{ N } \hat{i}$  and  $2 \text{ N } \hat{j}$
17. Argon gas is adiabatically compressed to half of its volume. If P, V and T represent the pressure, volume and temperature of the gaseous system respectively, then the correct equation representing the process is

- 1)  $TV^{2/5} = \text{constant}$     2)  $VP^{5/3} = \text{constant}$     3)  $TP^{-2/5} = \text{constant}$     4)  $PT^{2/5} = \text{constant}$

18. A circular coil of radius 20 cm and 20 turns, is mounted vertically with its plane in the magnetic meridian. A small magnetic needle (free to rotate about vertical axis) is placed at the centre of the coil. It is deflected through  $45^\circ$  when a current passes through the coil and is in equilibrium (Horizontal component of earth's field is  $B_H = 0.34 \times 10^{-4} T$ ). The current in the coil is

- 1)  $\frac{17}{10\pi} A$     2) 6A    3)  $6 \times 10^{-3} A$     4)  $\frac{3}{50} A$

19. One litre of oxygen at a pressure of 1 atm and two litres of nitrogen at a pressure of 0.5 atm, are introduced into a vessel of volume 1 L. If there is no change in temperature, the final pressure of the mixture of gas (in atm) is

- 1) 1.5    2) 1    3) 2    4) 4

20. The coil of a moving coil galvanometer is wound over a metal frame in order to

- 1) reduce hysteresis    2) provide electromagnetic damping  
3) increase the moment of inertia    4) increase the sensitivity

21. As the temperature increases, the electrical resistance

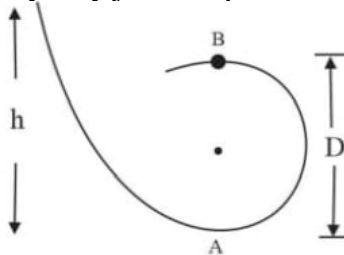
- (1) Increases for both conductors and semiconductors  
(2) Decreases for both conductors and semiconductors  
(3) Increases for conductors but decreases for semiconductors  
(4) Decreases for conductors but increases for semiconductors

22. In Young's double slit experiment, the intensities at two points  $P_1$  and  $P_2$  on the screen are

$I_1$  and  $I_2$  respectively. If  $P_1$  is located at the central bright fringe and  $P_2$  is located at a distance equal to a quarter of fringe width from  $P_1$ , then  $\frac{I_1}{I_2}$  is;

- 1) 2    2)  $\frac{1}{2}$     3) 4    4) 16

23. A body slides down on a frictionless track which ends in a circular loop of diameter D. The minimum height h in terms of D so that the body may just complete the circular loop, is



- 1)  $h = \frac{5}{2} D$     2)  $h = \frac{3}{2} D$     3)  $h = \frac{5}{4} D$     4)  $h = 2D$

24. Let  $N_\beta$  be the number of  $\beta$  particle emitted by 1 gram of  $Na^{24}$  radioactive nuclei having a half life of 15 h. In 7.5 h, the number  $N_\beta$  is close to [ $N_A = 6.023 \times 10^{23} \text{ mole}^{-1}$ ]

- 1)  $1.75 \times 10^{22}$     2)  $6.2 \times 10^{21}$     3)  $7.5 \times 10^{21}$     4)  $1.25 \times 10^{22}$

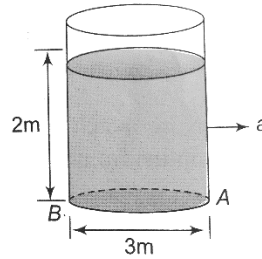
25. Assuming that about 20 MeV of energy is released per fusion reaction  ${}_1H^2 + {}_1H^2 \rightarrow {}_0n^1 + {}_2He^4$ . Then the mass of  ${}_1H^2$  consumed per day in a fusion reactor of power 1 megawatt will approximately be

- 1) 0.001 g    2) 0.1 g    3) 10.0 g    4) 1000 g

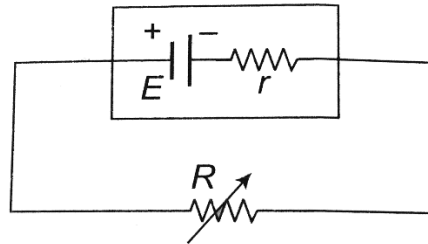
26. A long straight wire of radius R carries a current i. The magnetic field inside the wire at distance  $r$  ( $r < R$ ), from its centre is expressed as

- 1)  $\left(\frac{\mu_0 i}{\pi R^2}\right).r$     2)  $\left(\frac{2\mu_0 i}{\pi R^2}\right).r$     3)  $\left(\frac{\mu_0 i}{2\pi R^2}\right).r$     4)  $\left(\frac{\mu_0 i}{2\pi R}\right).r$

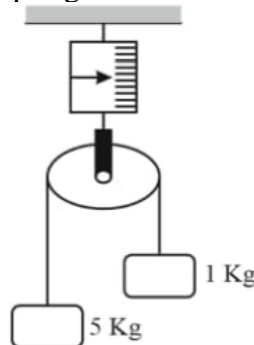
27. The minimum horizontal acceleration of the container so that the pressure at the point A of the container becomes atmospheric is (The tank is of sufficient height)



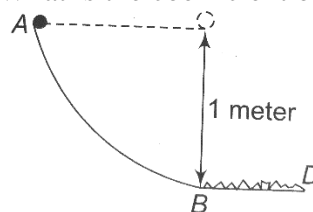
- 1)  $\frac{3}{2}g$                       2)  $\frac{4}{3}g$                       3)  $\frac{4}{2}g$                       4)  $\frac{3}{4}g$
28. In an electric circuit shown in the figure. The external resistance R is variable. It is found that same power is developed in external resistance R if its value is either  $5\Omega$  or  $20\Omega$ . With this information find the internal resistance (r) of the voltage source.



- 1)  $20\Omega$                       2)  $8\Omega$                       3)  $103\Omega$                       4)  $10\Omega$
29. A stone is lying at rest in a river. The minimum mass of stone,  $m = k\rho v^x g^{-3}$  is needed for remaining at rest. Here, k=constant having no unit, g=acceleration due to gravity, v=river flow velocity,  $\rho$ =density of water. The value of x is
- 1) 3                      2) 5                      3) 6                      4) 8
30. In the figure, a smooth pulley of negligible weight is suspended by a spring balance. Masses of 1kg and 5 kg are attached to the opposite ends of a string passing over the pulley and move with some acceleration. During their motion, the spring balance reads a weight of

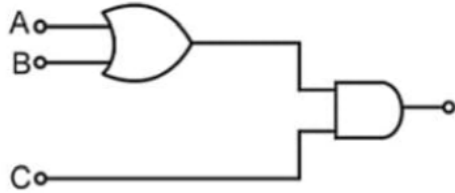


- 1) 6 kg                      2) Less than 6 kg                      3) More than 6 kg
- 4) May be more or less than 6 kg
31. In the track shown in figure section AB is a quadrant of a circle of 1 meter radius. A block is released at A and slides without friction until it reaches B. After B it moves on a rough horizontal floor and comes to rest at distance 3 meters from B. What is the coefficient of friction between floor and body?

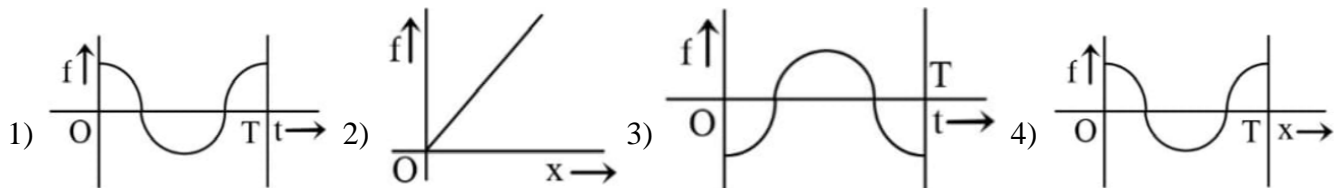


- 1)  $1/3$                       2)  $2/3$                       3)  $1/4$                       4)  $3/8$

32. The engine of a car produces an acceleration of  $6 \text{ ms}^{-2}$  in the car. If this car pulls another car of the same mass, then the acceleration would be  
 1)  $6 \text{ ms}^{-2}$                       2)  $12 \text{ ms}^{-2}$                       3)  $3 \text{ ms}^{-2}$                       4)  $1.5 \text{ ms}^{-2}$
33. A body of mass  $m = 10^{-2} \text{ kg}$  is moving in a medium and experiences a frictional force  $F = -kv^2$ . Its initial speed is  $v_0 = 10 \text{ ms}^{-1}$ . After 10s, its kinetic energy is  $\frac{1}{8}mv_0^2$ , then value of k will be:-  
 1)  $10^{-1} \text{ kg m}^{-1} \text{ s}^{-1}$                       2)  $10^{-3} \text{ kg m}^{-1}$                       3)  $10^{-3} \text{ kg s}^{-1}$                       4)  $10^{-4} \text{ kg m}^{-1}$
34. An electron is accelerated under a potential difference of 64V, the de-Broglie wavelength associated with electron is [ $e = -1.6 \times 10^{-19} \text{ C}$ ,  $m_e = 9.1 \times 10^{-31} \text{ kg}$ ,  $h = 6.623 \times 10^{-34} \text{ Js}$ ]  
 1)  $1.53 \text{ \AA}$                       2)  $2.53 \text{ \AA}$                       3)  $3.35 \text{ \AA}$                       4)  $4.54 \text{ \AA}$
35. To get an output 1 from the circuit shown in the figure, the input must be



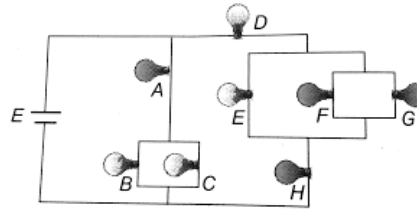
- 1)  $A = 0, B = 1, C = 0$                       2)  $A = 1, B = 0, C = 0$   
 3)  $A = 1, B = 0, C = 1$                       4)  $A = 1, B = 1, C = 0$
36. A body is performing simple harmonic motion of amplitude A and time period T. The figure shows position-time graph of the body. At any time t, acceleration of the body if f, then which of the following graphs is/are appropriate?



37. It is desired to make a converging achromatic combination of mean focal length 50cm by using two lenses of materials A and B. If the dispersive powers of A and B are in the ratio 1 : 2, the focal lengths of the convex and the concave lenses are respectively  
 1) 25 cm and 50 cm                      2) 50 cm and 25 cm  
 3) 50 cm and 100 cm                      4) 100 cm and 50 cm
38. Two factories are sounding their sirens at 800 Hz. A man goes from one factory to other at a speed of 2m/s. The velocity of sound is 320 m/s. The number of beats heard by the person in one second will be  
 1) 10                      2) 4                      3) 2                      4) 8
39. When the energy of the incident radiation is increased by 20%, the kinetic energy of the photoelectrons emitted from a metal surface increased from 0.5eV to 0.8eV. The work function of the metal is  
 1) 0.65 eV                      2) 1.0 eV                      3) 1.3 eV                      4) 1.5 eV
40. An electromagnetic wave of frequency  $1 \times 10^{14} \text{ Hz}$  is propagating along z-axis. The amplitude of the electric field is 4V/m. If  $\epsilon_0 = 8.8 \times 10^{-12} \text{ C}^2 / \text{N} - \text{m}^2$ , then the average energy density of electric field will be  
 1)  $35.2 \times 10^{-12} \text{ J / m}^3$                       2)  $35.2 \times 10^{-10} \text{ J / m}^3$                       3)  $35.2 \times 10^{-11} \text{ J / m}^3$                       4)  $35.2 \times 10^{-13} \text{ J / m}^3$
41. A ball is dropped from height H on to a horizontal surface. If the coefficient of restitution is e then the total time after which it comes to rest is

1)  $\sqrt{\frac{2H}{g}} \left( \frac{1-e}{1+e} \right)$       2)  $\sqrt{\frac{2H}{g}} \left( \frac{1+e}{1-e} \right)$       3)  $\sqrt{\frac{2H}{g}} \left( \frac{1+e^2}{1-e^2} \right)$       4)  $\sqrt{\frac{2H}{g}} \left( \frac{1-e^2}{1+e^2} \right)$

42. Assuming all bulbs are identical, rank the brightnesses of the bulbs, from brightest to dimmest.



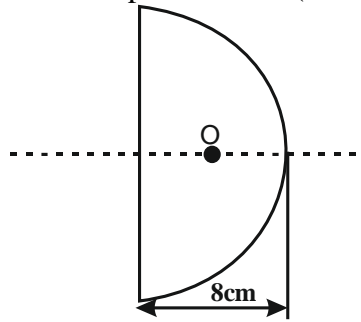
- 1)  $A > D = H > B = C > E = F = G$       2)  $A > B = C > D = H > E = F = G$   
 3)  $A > D = H > E = F = G > B = C$       4) all have equal brightness

43. A projectile is thrown with velocity  $u = 20\text{ m/s} \pm 5\%$  at an angle  $60^\circ$ . If the projectile comes back on the ground at the same level which of the following cannot be a possible answer for range.

Consider  $g = 10\text{ m/s}^2$

- 1) 34.6 m      2) 37.5 m      3) 32.0 m      4) 39.0 m

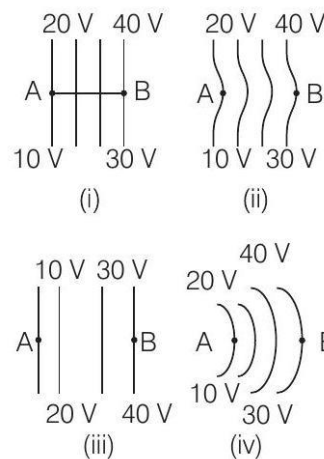
44. A plastic hemisphere has a radius of curvature of 8cm and an index of refraction of 1.6. On the axis halfway between the plane surface and the spherical one (4cm from each) is a small object O.



The distance between the two images when viewed along the axis from the two sides of the hemisphere is approximately

- 1) 1.0 cm      2) 1.5 cm      3) 3.75 cm      4) 2.5 cm

45. The diagrams below show regions of equipotentials.



A positive charge is moved from A to B in each diagram.

- (1) Maximum work is required to move  $q$  in figure (iii)  
 (2) In all the four cases, the work done is the same  
 (3) Minimum work is required to move  $q$  in figure (i)  
 (4) Maximum work is required to move  $q$  in figure (ii)

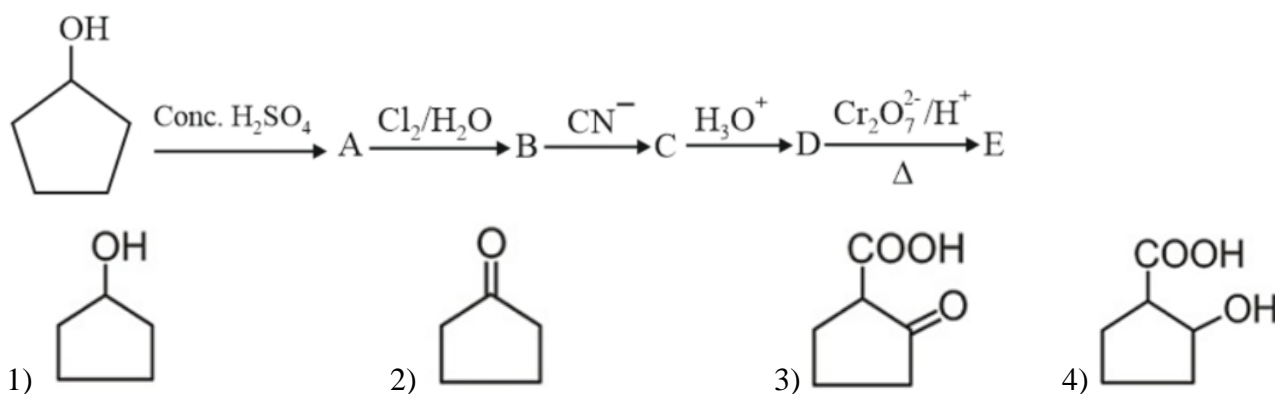
## PART-2 : CHEMISTRY

46. On what grounds can you say that scandium ( $Z = 21$ ) is a transition element but zinc ( $Z = 30$ ) is not one?
- 1) Incompletely filled 3d orbitals in Sc
  - 2) Coloured compounds
  - 3) Variable oxidation state
  - 4) None of the above
47. The catalyst used in the manufacture of polyethlene by Ziegler – Natta's method is:
- 1) Titanium tetrachloride and triphenyl aluminium
  - 2) Titanium tetrachloride and triethyl aluminium
  - 3) Titanium dioxide
  - 4) Titanium isoperoxide
48. The carbon – carbon bond distance in benzene is
- 1) Longer than a C – C single bond
  - 2) Longer than a C = C double bond
  - 3) Shorter than a C = C double bond
  - 4) Shorter than a C  $\equiv$  C triple bond
49. The dissociation constants for acetic acid and HCN at  $25^\circ\text{C}$  are  $1.5 \times 10^{-5}$  and  $4.5 \times 10^{-10}$ , respectively. The equilibrium constant for the equilibrium,  $\text{CN}^- + \text{CH}_3\text{COOH} \rightleftharpoons \text{HCN} + \text{CH}_3\text{COO}^-$  would be
- (1)  $3.0 \times 10^5$
  - (2)  $3.0 \times 10^{-5}$
  - (3)  $3.0 \times 10^{-4}$
  - (4)  $3.0 \times 10^4$
50. Which of the following coordination compounds would exhibit optical isomerism?
- (1) Pentaamminenitrocobalt (III) iodide
  - (2) Diamminedichloroplatinum (II)
  - (3) Trans-dicyanobis (ethylenediamine) chromium (III) chloride
  - (4) Tris-(ethylenediamine) cobalt (III) bromide
51.  $2.56 \times 10^{-3}$  equivalent of  $\text{KOH}$  is required to neutralize  $0.12544\text{g}$   $\text{H}_2\text{XO}_4$ . The atomic mass of  $X$  (in  $\text{g/mol}$ ) is :
- [Given :  $\text{H}_2\text{XO}_4$  is a dibasic acid]
- 1) 16
  - 2) 8
  - 3) 7
  - 4) 32
52. Which one of the following compounds is a peroxide?
- 1)  $\text{KO}_2$
  - 2)  $\text{BaO}_2$
  - 3)  $\text{MnO}_2$
  - 4)  $\text{NO}_2$
53. If activation energy,  $E_a$  of the reaction is equal to  $RT$  then
- 1) The rate of reaction will be independent on initial concentration of reactant
  - 2) The rate constant becomes approximately equal to 37% of the Arrhenius constant
  - 3) The rate of reaction becomes infinite
  - 4) The rate of reaction always be first order
54.  $\text{Ph}-\text{CH}_2-\text{CH}=\text{CH}_2 \xrightarrow{\text{dilH}_2\text{SO}_4} \text{A}$ , A is
- 1)  $\text{Ph}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{OH}$
  - 2)  $\text{Ph}-\text{CH}_2-\underset{\text{OH}}{\text{CH}}-\text{CH}_3$
  - 3)  $\text{Ph}-\underset{\text{OH}}{\text{CH}}-\text{CH}_2-\text{CH}_3$
  - 4)  $\text{Ph}-\text{CH}_2-\text{OH}$
55. The number of gram molecules of oxygen in  $6.02 \times 10^{24}$   $\text{CO}$  molecules is
- 1) 5 gm molecules
  - 2) 10 gm molecules
  - 3) 1 gm molecules
  - 4) 0.5 gm molecules

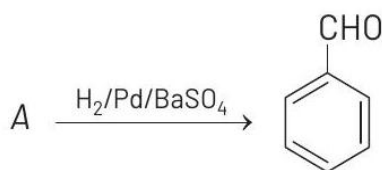


64. The equilibrium constant for the reaction,  $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$  at temperature T is  $4 \times 10^{-4}$ .  
The value of  $K_c$  for the reaction  $NO(g) \rightleftharpoons \frac{1}{2}N_2(g) + \frac{1}{2}O_2(g)$  at the same temperature is  
1)  $2.5 \times 10^2$                       2) 50                                      3)  $4 \times 10^{-4}$                               4) 0.02
65. Which of the following is correct?  
1) Tin stone is magnetic in nature                                      2) Wolframite is non – magnetic in nature  
3) Wolframite is  $FeWO_4.MnWO_4$                                       4) Cassiterite and rutile are sulphides ore
66. The osmotic pressure of solution containing 34.2 g of cane sugar (molar mass =  $342 \text{ g mol}^{-1}$  in 1L of solution at  $20^\circ C$  is (Given,  $R=0.082 \text{ L atm K}^{-1}\text{mol}^{-1}$ )  
1) 2.40 atm                      2) 3.6 atm                                      3) 24 atm                                      4) 0.0024 atm
67.  $C_6H_5OH + CHCl_3 + NaOH \rightarrow$  Salicylaldehyde the electrophile involved in the above reaction is.  
1) Dichloromethyl cation ( $CHCl_2$ )                                      2) Dichlorocarbene ( $:CCl_2$ )  
3) Trichloromethyl anion  $\bar{C}Cl_3$                                       4) Formyl cation ( $CHO$ )
68. When aniline is treated with sodium nitrite and hydrochloric acid at  $0^\circ C$ , it gives  
1) Phenol and  $N_2$                       2) Diazonium salt                      3) Hydrazo compound                      4) No reaction takes place
69. Which of the following statements about hydrogen is incorrect?  
1) Hydrogen has three isotopes of which tritium is the most common.  
2) Hydrogen never acts as cation in ionic salts.  
3) Hydronium ion,  $H_3O^+$  exists freely in solution.  
4) Dihydrogen acts as a reducing agent
70. The angle between the overlapping of one s – orbital and one p – orbital is  
1)  $180^\circ$                                       2)  $120^\circ$                                       3)  $190^\circ 28'$                                       4)  $120^\circ 60'$
71. At  $25^\circ C$  the pH of water is 7. When temperature of water is increased to  $70^\circ C$  than pH of water and nature of water is  
1) pH will decrease and the sample becomes acidic  
2) pH will increase but the sample will remain neutral  
3) pH will remain constant as 7.  
4) pH will decrease but the sample will remain neutral
72. An ether is more volatile than an alcohol having the same molecular formula. This is due to  
1) dipolar character of ethers  
2) alcohols having resonance structures  
3) inter – molecular hydrogen bonding in ethers  
4) inter – molecular hydrogen bonding in alcohols
73. The number of Faradays (  $F$  ) required to produce 20 g of calcium from molten  $CaCl_2$  (Atomic mass of  $Ca = 40 \text{ g mol}^{-1}$  ) is  
(1) 2                                      (2) 3                                      (3) 4                                      (4) 1
74. Higher order ( $>3$ ) reactions are rare due to :  
1) Loss of active species on collision  
2) Low probability of simultaneous collision of all the reacting species  
3) Increase in entropy and activation energy as more molecules are involved  
4) Shifting of equilibrium towards reactants due to elastic collisions
75. Amongst the following, the most stable complex is  
1)  $[Fe(H_2O)_6]^{3+}$                       2)  $[Fe(NH_3)_6]^{3+}$                       3)  $[Fe(C_2O_4)_3]^{3-}$                       4)  $[FeCl_6]^{3-}$
76. Phenol is a weaker acid than acetic acid because  
1) Phenoxide ion is better stabilized by resonance than acetate ion  
2) Acetate ion is better stabilized by resonance than phenoxide ion  
3) Phenol is least soluble in water than acetic acid

- 4) Both phenoxide ion and acetate ion are stable
77. Select correct statement (s):
- 1) Acidic strength of  $\text{HBr} > \text{HCl}$  but reverse is true for their reducing property
  - 2) Basic strength of  $\text{PH}_3 > \text{AsH}_3$  but reverse is true for their bond angle
  - 3) Dipole moment of  $\text{CH}_3\text{Cl} > \text{CH}_3\text{F}$  but reverse is true for their  $\text{H}\hat{\text{C}}\text{H}$  bond angle
  - 4)  $K_{a1}$  of fumaric acid is higher than maleic acid but reverse is true for their  $K_{a2}$
78. Which of the following statement is relation to the hydrogen atom is correct?
- 1) 3s, 3p and 3d – orbitals all have the same energy
  - 2) 3s and 3d – orbitals is lower energy than 3d – orbital
  - 3) 3p – orbital is lower in energy than 3d – orbital
  - 4) 3s – orbital is lower in energy than 3p – orbital
79.  $\text{SiCl}_4$  on hydrolysis forms 'X' and  $\text{HCl}$ . Compound 'X' loses water at  $1000^\circ\text{C}$  and gives 'Y'. Compounds 'X' and 'Y' respectively are
- 1)  $\text{H}_2\text{SiCl}_6, \text{SiO}_2$
  - 2)  $\text{H}_4\text{SiO}_4, \text{Si}$
  - 3)  $\text{SiO}_2, \text{Si}$
  - 4)  $\text{H}_4\text{SiO}_4, \text{SiO}_2$
80. When dry silver chloride is fused with sodium carbonate, we get pure:
- 1) Silver
  - 2) Chlorine
  - 3) Sodium
  - 4) Carbonmonoxide
81. Electron Affinity of  $\text{Cl}$  is 3.7 eV. How much Energy released in Kcal when 2g of gaseous chlorine atoms is converted to  $\text{Cl}^-$  ions in the gaseous state.
- 1) 4.80 kCal
  - 2) 5.20 kCal
  - 3) 1.50 kCal
  - 4) 3.60 kCal
- 82.



83. Calculate the total pressure in a 10.0 L cylinder which contains 0.4 helium, 1.6 g oxygen and 1.4 g nitrogen at  $27^\circ\text{C}$ . { $R=0.82 \text{ Lamp } K^{-1}\text{mol}^{-1}$ }
- 1) 0.492 atm
  - 2) 49.2 atm
  - 3) 4.92 atm
  - 4) 0.0492 atm
84.  $N_0/4$  atoms of  $X(g)$  are converted into  $X^+(g)$  by energy  $E_1$ .  $N_0/4$  atoms of  $X(g)$  are converted into  $X^-(g)$  by energy  $E_2$ . Hence, ionization potential and electron affinity of  $X(g)$  are :
- 1)  $\frac{4E_1}{N_0}, \frac{4(E_1 - E_2)}{N_0}$
  - 2)  $\frac{4E_1}{N_0}, \frac{4E_2}{N_0}$
  - 3)  $\frac{(E_1 - E_2)}{N_2}, \frac{4E_2}{N_0}$
  - 4) None is correct
85. Identify compound (A) in the following reaction.





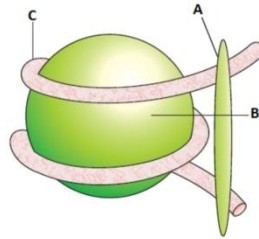
3) MTPs are considered relatively safe during the first trimester in comparison to second trimester abortions.

4) MTP is not allowed if the pregnancy is the result of rape.

95. If the two genes are having % of recombination less than 50%, then the progeny of  $F_2$  generation will show

- 1) higher number of the recombinant types
- 2) segregation in the expected 9:3:3:1 ratio
- 3) segregation in 3:1 ratio
- 4) higher number of the parental types

96. Identify parts labelled A,B and C in the given diagram and select the correct option



	A	B	C
1)	Negatively charged DNA	Positively charged histone octamer	H1 histone
2)	H1 histone	Negatively charged DNA	Positively charged histone octamer
3)	H1 histone	Positively charged histone octamer	Negatively charged DNA
4)	H1 histone	Negatively charged histone octamer	Negatively charged DNA

97. I. Glucose or galactose may bind with the repressor and inactivate it.

II. In the absence of lactose, the repressor binds with the operator region

III. The z – gene codes for permease

IV. The was elucidated by Francis Jacob and Jacques Monod.

The correct statements are:

- 1) I and II                      2) II and III                      3) II and IV                      4) I and III

98. Sometimes the change in allelic frequency is so different in the new sample of the population that they become a different species. The original drifted population create a different population. This is called

- 1) Founder effect                      2) Bottleneck effect                      3) metapopulation effect                      4) Gene migration

99. How many of the following diseases are transmitted by contaminated food and water?

[Typhoid, Ringworms, Pneumonia, Common cold, Dengue, Amoebiasis, Chikungunya]

- 1) One                      2) Two                      3) Three                      4) Four

100. Select the incorrect statement from the following

- 1) Through vaccines, antigenic proteins of pathogen or dead or weakened pathogens are introduced in the body
- 2) Anti – venom provides active immunity
- 3) Anti – histamines control allergy
- 4) Both 1 and 2

101. If the protoplast of tomato is fused with potato protoplast and grown as new plant, it will be known as

- 1) Explant                      2) Soma clones                      3) Callus                      4) Somatic hybrid

102. Mark the incorrect statement

- 1) Insect and pest infestation is one of the major causes for large scale destruction of crop plants
- 2) breeding method for insect pest resistance involves the special steps that are not similar to use in other agronomic traits such as yield or quality.
- 3) malnutrition of micronutrients and vitamins can be termed as hidden hunger.

- 4) Soma clones are genetically identical to original plants.
103. Which of the following describes out – crossing?  
 1) mating of more closely related individuals within the same breed for 4 – 6 generations.  
 2) This is the practice of mating of animals within the same breed, but having no common ancestors on either side of their pedigree up to 4 – 6 generations.  
 3) Superior males of one breed are mated with superior females of another breed (of same species).  
 4) Male and female animals of two different species are mated.
104. *Monascus purpureus* is a yeast used commercially in the production of  
 1) Ethanol                      2) Streptokinase for removing clots from the blood vessels  
 3) Citric acid                      4) Blood cholesterol lowering statins
105. Which of these is not the feature of a cloning vector?  
 1) Ori supporting high copy number  
 2) Selectable marker  
 3) Resistant to the action of restriction enzymes  
 4) Presence of cloning site
106. Primers used in PCR must be:  
 1) 3' – end specific                      2) 5' – end specific  
 3) It can be 3' – end specific or 5' – end specific  
 4) primers are not needed in PCR.
107. The variant of cry genes used to control corn borers is  
 1) cryIAc                      2) cryIAb                      3) cryIIAb                      4) both 1 and 3
108. Which of the following locations acts as the reservoir for nitrogen cycle?  
 1) Atmosphere                      2) Sedimentary bedrock                      3) Soil  
 4) Fossilised plant and animal remains
109. All of the following contributed to Mendel's success, except  
 1) Mendel's selection of pea plant for experiments  
 2) Application of mathematical knowledge  
 3) Working on small sampling size at a time  
 4) Taking one character at a time
110. Select the incorrect statement  
 1) A genus comprises of a group of related species which has more characters in common in comparison to species of other genera.  
 2) higher the category, greater is the difficulty of determining the relationship to other taxa at the same level.  
 3) Going higher from species to kingdom, the number of common characteristics goes on increasing.  
 4) All organisms, including plants and the animal kingdom, have species as the lowest category.
111. Which organism does not produce oxygen during photosynthesis?  
 1) *Anabaena*                      2) *Funaria*                      3) Higher plants                      4) *Rhodospirillum*
112. The smallest among the following is:  
 1) TMV                      2) Bacteriophage                      3) *Neurospora*                      4) *E. Coli*
113. The second –largest phylum of invertebrate animals is:  
 1) Annelida                      2) Aschelminthes                      3) Mollusca                      4) Platyhelminthes
114. Select the set of incorrect statements  
 I. The circulatory system in Platyhelminthes has a single opening.  
 II. Annelids are the first animals to have true coelom and metamerism( true segmentation).  
 III. The space between the hump and the mantle is called the mantle cavity in which gills are present.  
 IV. Most of the echinoderms are bisexual.  
 1) I, II                      2) III, IV                      3) II, III                      4) I, IV
115. How many of the following shows zygomorphic flowers with valvate/imbricate aestivation?  
*Indigofera, Lupin, Petunia, Aloe, Colchicum autumnale, Sesbania, Trifolium, Solanum*

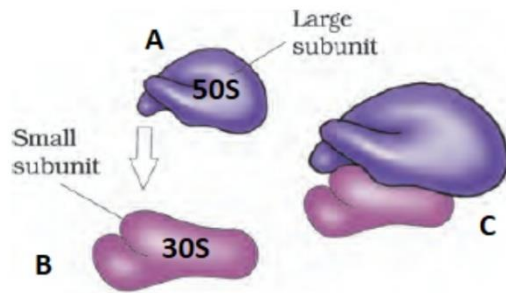
- 1) 3                      2) 4                      3) 5                      4) 6
116. Annual rings are formed by the activity of  
 1) Cambium                      2) Secondary xylem    3) Phellogen                      4) Xylem and phloem
117. How many spermathecae are found in the male cockroach?  
 1) One                      2) One pair                      3) 2 Pairs                      4) None
118. The term used for transfer of pollen grains from anthers of one plant to stigma of a different plant which, during pollination, brings genetically different types of pollen grains to stigma is  
 (1) xenogamy                      (2) geitonogamy                      (3) chasmogamy                      (4) cleistogamy
119. The axoneme is found in  
 1) Cilia                      2) Flagella                      3) Microbodies                      4) Both 1 and 2
120. Statement 1 – Competitive inhibitor is also called as substrate analogue.  
 Statement 2 – It resembles the enzyme in structure  
 1) both 1 and 2 are correct                      2) 1 is correct and 2 is incorrect  
 3) 1 is incorrect and 2 is correct                      4) both are incorrect
121. Analyze the events occurring during every stage of the cell cycle, how the amount of DNA content (C) per cell changes and select the correct option.  
 1) DNA content becomes doubled during S phase of cell cycle  
 2) DNA content is reduced to half during anaphase  
 3) DNA content remain same during meiosis I  
 4) Both 1 and 2
122. Which of the following statement is incorrect?  
 1) Different substances move independently along their concentration gradient in mass flow.  
 2) Active absorption of ions from the soil by the root is mainly affected by respiratory activity of root.  
 3) The translocation of organic solutes in sieve tube members is supported by mass flow.  
 4) Root pressure develops due to active absorption
123. How many protons and electrons are required to fix a dinitrogen?  
 1) 32 each                      2) 8 each                      3) 6 each                      4) 4 each
124. ATP and  $NADPH + H^+$  both are required during the conversion of \_\_\_\_\_ in  $C_3$  cycle  
 1)  $RUBP + CO_2 \rightarrow PGA$  (2 molecules)  
 2)  $PGA \rightarrow PGAL$   
 3)  $PGAL \rightarrow DHAP$   
 4) Fructose – 1, 3 – biphosphate  $\rightarrow$  Glucose
125. In the electron transport chain, the correct sequence of electron acceptor is  
 1) Cytochrome  $a, a_3, b, c$                       2) Cytochrome  $b, c, a, a_3$   
 3) Cytochrome  $b, c_3, a, a_3$                       4) Cytochrome  $c, b, a, a_3$
126. Ethylene is highly effective in fruit ripening. It enhances the respiration rate during ripening of fruits, this rise in rate of respiration is called?  
 1) Respiratory climactic                      2) Respiratory quotient  
 3) Respiratory effect                      4) Respiratory quiescence
127. The amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis is called  
 (1) Net primary production                      (2) Secondary production                      (3) Primary production  
 (4) Gross primary production
128. Moist cuticle is the respiratory organ in  
 1) Insects                      2) Earthworms  
 3) Aquatic arthropods and mollusks                      4) Amphibians like frogs
129. ECG is a graphical representation of the electrical activity of the heart during a cardiac cycle. Identify the incorrect interpretation.  
 1) P – wave: Depolarisation of the atria.



2)	0.3	3-7	9
3)	0.3	3-5	4
4)	0.3	3-5	7

142. The cellulose cell wall is observed in members of  
 1) Protista                      2) Plantae                      3) both 1 and 2                      4) Monera
143. Read the following statements:  
 i) Open type circulatory systems are found in Arthropods  
 ii) pseudocoelomates are bilaterally symmetrical  
 iii) Most of the sponges are radially symmetrical.  
 iv) Platyhelminthes have a tissue level of organization.  
 How many of the above statements are incorrect?  
 1) One                      2) Two                      3) Three                      4) None
144. A man of blood group A marries a woman of blood group AB. Which type of progeny indicates that man is heterozygous?  
 1) O                      2) A                      3) B                      4) AB
145. The essential chemical components of many coenzymes are  
 1) Nucleic acid                      2) Carbohydrates                      3) Vitamins                      4) Proteins
146. Biological organization starts with  
 1) Cellular level                      2) Organismic level  
 3) Sub microscopic molecular level                      4) Tissue level
147. Sea fur belongs to phylum A. members of such phylum have:  
 1) Bilateral symmetry                      2) Blind sac body plan  
 3) Metamerism                      4) Triploblastic nature
148. Which of the following statement is incorrect about phylum hemichordate.  
 1) Excretion by proboscis glands                      2) Respiration by proboscis glands  
 3) Monoecious  
 4) Have a rudimentary structure in the collar region called stomochord
149. Cytoskeleton is made up of  
 1) Callure deposits                      2) Cellulosic microfibrils                      3) Proteinaceous filaments  
 4) Calcium carbonate granules
150. Callus can form plantlets by altering the concentration of  
 1) Phytohormones                      2) Amino sugars                      3) vitamins                      4) Sugars
151. Which one of the following can be explained on the basis of Mendel's Law of Dominance?  
 A. Out of one pair of factors one is dominant and the other is recessive.  
 B. Alleles do not show any expression and both the characters appear as such in  $F_2$  generation.  
 C. Factors occur in pairs in normal diploid plants.  
 D. The discrete unit controlling a particular character is called factor.  
 E. The expression of only one of the parental characters is found in a monohybrid cross.  
 Choose the correct answer from the options given below:  
 (1) A, B and C only  
 (2) A, C, D and E only  
 (3) B, C and D only  
 (4) A, B, C, D and E
152. A biocontrol agent to be a part of an integrated pest management should be  
 (1) species-specific and symbiotic  
 (2) free-living and broad spectrum  
 (3) narrow spectrum and symbiotic  
 (4) species-specific and inactive on non-target organisms
153. Dense connective tissue can be observed at all of the following locations, except  
 1) Ligament                      2) Tendon                      3) beneath the skin                      4) Skin
154. Select the incorrect statement

- 1) Algin is obtained from Algae.
  - 2) Cyanobacteria form mycorrhizae which helps in the absorption of phosphate
  - 3) *Salvinia*, *Selaginella* and *Azolla* show heterospory.
  - 4) The genome of TMV is RNA
155. Conducting part of respiratory tract ends with the
- 1) Segmental bronchi
  - 2) Segmental bronchiole
  - 3) Respiratory bronchioles
  - 4) Terminal bronchiole
156. The process of conversion of organic nitrogen from dead material to ammonia is known as
- 1) Nitrification
  - 2) Decomposition
  - 3) Denitrification
  - 4) Ammonification
157. Which of the following is incorrectly matched?
- 1) ABO Blood group of Humans – Multiple allelism.
  - 2) Skin Colour in human – Multiple allelism
  - 3) Flower colour in *Mirabilis* – Incomplete dominance
  - 4) Phenylketonuria – Pleiotropisim
158. Vasa recta is associated with
- 1) Most of cortical nephrons
  - 2) Few of cortical nephrons only
  - 3) Juxta medullary nephrons
  - 4) Urinary bladder
159. Rubisco enzyme can act both as carboxylase and as oxygenase. In  $C_4$  cycle it functions are
- 1) Oxygenase only
  - 2) Carboxylase only
  - 3) Mainly carboxylase activity minimizing oxygenase
  - 4) Oxygenase but sometimes as carboxylase
160. Which of the following is not a post polling \_\_\_\_development?
- 1) Formation of callose plugs \_\_\_\_\_tube
  - 2) Division of pollen cell into tube \_\_\_\_and generative cell
  - 3) Secretion of pectinase and other hydrolytic enzyme
  - 4) Swelling of tube cell and formation of pollen tube
161. Which of the following is not the example of synovial joint?
- 1) between humerus and pectoral girdle
  - 2) between atals and axis
  - 3) between carpal and metacarpal of thumb
  - 4) Between the adjacent vertebrae
162. How many of the given statements are correct?
- A. Hypotahlamus is the centre for eating and drinking
  - B. Corpus callosum is made up of nerve fibres
  - C. ADH is synthesized by the posterior pituitary.
  - D. Balancing by semicircular canals is doen by the macula.
- 1) One
  - 2) Two
  - 3) Three
  - 4) All
163. According to the taxonomic hierarchy, which of the following statements are correct?
- 1) Fells and *Canis* are placed under same family
  - 2) Potato and brinjal belong to the same genus.
  - 3) Classes of plants with few similar characters are assigned to higher category called order.
  - 4) Panther and *Felis domestica* are placed in different families.
164. Dikaryon formation is characteristics of
- 1) Ascomycetes and Basidiomycetes
  - 2) Phycomycetes and Ascomycetes
  - 3) Basidiomycetes and Zygomycetes
  - 4) Phycomycetes and Deuteromycetes
165. Analyze the diagram given below, and select the correct option regarding part labeled as C.



- 1) 70S subunit formed during eukaryotic translation
  - 2) 70S subunit formed during prokaryotic translation
  - 3) 80S subunit formed during prokaryotic translation
  - 4) 80S subunit formed during eukaryotic translation
166. The lining of each seminiferous tubule is made up of 2 types of cells – A and B. ‘A’ cells undergo meiosis and result in sperm formation. ‘B’ cells secrete
- 1) Testosterone
  - 2) Estrogen
  - 3) FSH
  - 4) None of these
167. The longest part of the fallopian tube is
- 1) Isthmus
  - 2) Fimbriated end
  - 3) Ampulla
  - 4) Uterine part of Fallopian tube
168. The mRNA consisting of 282 nucleotides can produce a polypeptide chain of
- 1) 282 amino acids
  - 2) 120 amino acids
  - 3) 93 amino acids
  - 4) 94 amino acids
169. “Every species has a right to live”. What kind of value implies the conservation of biodiversity?
- 1) Narrowly utilitarian
  - 2) broadly utilitarian
  - 3) Aesthetic
  - 4) Ethical
170. In a complete study of grassland ecosystem and pond ecosystem, it may be observed that
- 1) The abiotic components are almost similar.
  - 2) The biotic components are almost similar
  - 3) Both biotic and abiotic component are different
  - 4) Primary and secondary consumers are similar
171. Which of the statement is not applicable to mutations?
- 1) These are discontinuous variations
  - 2) Usually recessive
  - 3) Usually harmful
  - 4) Predictable
172. Which of the following set shows convergent evolution?
- 1) Anteater and Numbat
  - 2) Lemur and Bob cat
  - 3) Spotted Cuscus and Wolf
  - 4) Mole and flying Phalanger
173. In eukaryotic transcription, heteronuclear RNA (hnRNA) is transcribed by
- 1) RNA polymerase I
  - 2) RNA polymerase II
  - 3) RNA polymerase III
  - 4) All of these
174. Vertical distribution of different species occupying different levels is called
- 1) Stratification
  - 2) Eutrophication
  - 3) Productivity
  - 4) Biodiversity
175. Crossing over occurs between
- 1) Two different genomes
  - 2) Homologous chromosome
  - 3) Sister chromatid
  - 4) Non homologous chromosome
176. Select the set of opioids
- 1) Morphine and hashish
  - 2) Codeine and charas
  - 3) herion and marijuana
  - 4) Morphine and heroin
177. Blood and bone marrow tests are mainly done for analysis of
- 1) leukemia
  - 2) Gastric carcinoma
  - 3) Skin carcinoma
  - 4) brain tumour
178. When both alleles of a pair are fully expressed in heterozygotes, they are called
- 1) Lethals
  - 2) Codominant
  - 3) Incomplete dominants
  - 4) Recessive allele
179. No new follicles develop in the luteal phase of the menstrual cycle because
- (1) follicles do not remain in the ovary after ovulation
  - (2) FSH levels are high in the luteal phase

(3) LH levels are high in the luteal phase

(4) both FSH and LH levels are low in the luteal phase

180. Which layer of uterus exhibits strong contraction during parturition?

1) Perimetrium

2) Myometrium

3) Endometrium

4) Mesovarium