NEET SAMPLE PAPER – 2

Maximum Marks: 720

Topics Covered:

Physics	**:Full Syllabus**
Chemistry	**:Full Syllabus**
Biology	**: Full Syllabus**

Important Instruction:

1. Attempting all the questions are compulsory.
2. Use **Blue / Black Ball** point pen only.
3. There are three sections of equal weightage in the question paper A, B, C (**Physics, Chemistry having 45 questionsand Biology having 90 questions.**
4. For marking scheme, +4 marks for each correct answer and -1 marks for each incorrect answer.
5. Use of calculator and other electronic devices is not allowed during the exam.
6. No extra sheets will be provided for any kind of work.

Name of the Student : ……Class: ……

Father's Name:……Signature : ……

Branch Name : ……Contact No : ……

PART – A (PHYSICS)

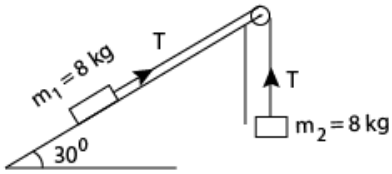
1. If momentum (P), area (A) and time (T) are taken to be fundamental quantities, then energy has the Dimensional formula

(a) $[P^1A^{-1}T^1]$ (b) $[P^2A^1T^1]$ (c) $\left[P^1A^{-1/2}T^1\right]$ $(d)[PA^{\frac{1}{2}}T^{-1}]$

2. The bob of a simple pendulum is a spherical hollow ball filled with water. A plugged hole near the bottom of the oscillating bob gets suddenly unplugged. During observation, till water is coming out, the time period of oscillation would

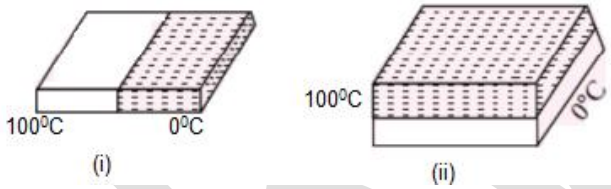
(a) remain unchanged
(b) increase towards a saturation value
(c) first increase and then decrease to the original value
(d) first decrease and then increase to the original value

3. Two masses are connected by a string as shown in the figure over a frictionless pulley attached to a fixed wedge.
The acceleration of the system is



(a) 4 m s^{-2} (b) 2 m s^{-2}
(c) zero (d) 9.8 m s^{-2}

4. Two identical rectangular rods of metal of thermal resistance R, are welded end to end as shown in figure (i) and 10 J of heat flows through the rods in 2 min. How long would it take for 30 J of heat to flow through the rods if they are welded as shown in figure (ii)

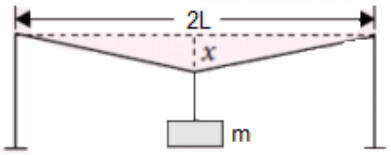


(a) 2 min (b) 1.5 min (c) 1 min (d) 4 min

5. Distance between the centers of two stars is 10a. The masses of these stars are M and 16M and their radii a and 2a respectively. A body of mass m is fired straight from the surface of the larger star towards the smaller star. The minimum initial speed for the body to reach the surface of smaller star is

(a) $\frac{2}{3}\sqrt{\frac{Gm}{a}}$ (b) $\frac{3}{2}\sqrt{\frac{5Gm}{a}}$ (c) $\frac{2}{3}\sqrt{\frac{5Gm}{a}}$ (d) $\frac{3}{2}\sqrt{\frac{Gm}{a}}$

6. A mild-steel wire of length 2L and cross-sectional area A is stretched, well within elastic limit, horizontally between two pillars,A mass m is suspended from the midpoint of the wire. Strain in the wire is

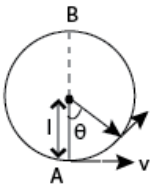


(a) $\frac{x^2}{2L^2}$ (b) $\frac{x}{L}$ (c) $\frac{x^2}{L}$ (d) $\frac{x^2}{2L}$

7. Two point masses of 0.3 kg and 0.7 kg are fixed at the ends of a rod of length 1.4 m and of negligible mass. The rod is set rotating about an axis perpendicular to its length with a uniform angular speed. The point on the rod through which the axis should pass in order that the work required for rotation of the rod is minimum, is located at a distance of

(a) 0.42 m from mass of 0.3 kg (b) 0.70 m from mass of 0.7 kg
(c) 0.98 m from mass of 0.3 kg (d) 0.98 m from mass of 0.7 kg

8. A bob of mass m is suspended by a massless string of length I. The horizontal velocity v at position a is just sufficient to make it reach the point B.



The angle θ at which the speed of the bob is half of that at A, satisfies

(a) $\theta = \frac{\pi}{4}$ (b) $\frac{\pi}{4} < \theta < \frac{\pi}{2}$ (c) $\frac{\pi}{2} < \theta < \frac{3\pi}{4}$ (d) $\frac{3\pi}{4} < \theta < \pi$

9. An *insulated* container containing n moles of monoatomic gas of molar mass m is moving with a velocity v_0. If the container is *suddenly* stopped, find the changes in temperature

(a) $\frac{mv_0^2}{3R}$ (b) $\frac{mv_0^2}{3nR}$ (c) $\frac{mnv_0^2}{R}$ (d) $\frac{mv_0^2}{2R}$

10. An object of specific gravity ρ is hung from a thin steel wire. The fundamental frequency for transverse standing waves in the wire is 300 Hz. The object is immersed in water so that one half of its volume is submerged. The new fundamental frequency in Hz is

(a) $300\left(\frac{2\rho-1}{2\rho}\right)^{1/2}$ (b) $300\left(\frac{2\rho}{2\rho-1}\right)^{1/2}$ (c) $300\left(\frac{2\rho}{2\rho-1}\right)$ (d) $300\left(\frac{2\rho-1}{2\rho}\right)$

11. A student uses a simple pendulum of exactly 1 m length to determine g, the acceleration due to gravity. He uses a stop watch with the least count of 1 s for this and records 40 s for 20 oscillations.

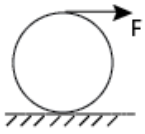
For this observation, which of the following statements is true?

(a) Error ΔT in measuring T, the time period, is 0.02 seconds
(b) Error ΔT in measuring T, the time period, is 1 second
(c) Percentage error in the determination of g is 5%
(d) Percentage error in the determination of g is 2.5

12. The water flows from a tap of diameter 1.25 cm with a rate of 5×10^{-5} m^3 s^{-1}. The density and coefficient of viscosity are 10^3 kg m^3 and 10^{-3} Pa is respectively. The flow of water is

(a) steady with Reynolds number 5100 (b) turbulent with Reynolds number 5100
(c) steady with Reynolds number 3900 (d) turbulent with Reynolds number 3900

13. A force F is applied at the top of a ring of mass M and radius R placed on a rough horizontal surface as shown in figure. Friction is sufficient to prevent slipping.



The friction force acting on the ring is

(a) $\frac{F}{2}$ towards right (b) $\frac{F}{3}$ towards left (c) $\frac{2F}{3}$ towards right (d) zero

14. In refrigerator one removes heat from a lower temperature and deposits to the surroundings at a higher temperature. In this process, mechanical work has to be done, which is provided by an electric motor. If the motor is of 1 kW power, and heat is transferred from –3°C to 27°C, find the heat taken out of the refrigerator per second assuming its efficiency is 50% of a perfect heat engine.

(a) 14 J (b) 12 J (c) 19 J (d) 20 J

15. Three points masses, each of mass m, are placed at the corners of an equilateral triangle of side l. Then the moment of inertia of this system about an axis along one of the side of the triangle is

(a) $3ml^2$ (b) ml^2 (c) $\frac{3}{4}ml^2$ (d) $\frac{3}{2}ml^2$

16. A physical quantity, y = $\frac{a^4b^2}{(cd^4)^{1/3}}$ has four observables a, b, c and d.

The percentage error in a, b, c and d are 2%, 3%, 4% and 5% respectively the error in y will be

(a) 6% (b) 11% (c) 12% (d) 22%

17. A smooth inclined plane of length L having inclination θ with the horizontal is inside a lift which is moving down with retardation a. The time taken by a body to slide down the inclined plane, from rest, will be

(a) $\sqrt{\frac{2L}{(g+a)\sin\theta}}$ (b) $\sqrt{\frac{2L}{(g-a)\sin\theta}}$ (c) $\sqrt{\frac{2L}{g\ \sin\theta}}$ (d) $\sqrt{\frac{2L}{a\sin\theta}}$

18. A body cools from 80°C to 64°C in 5 min and same body cools from 80°C to 52°C in 10 min, what is the temperature of the surrounding?

(a) 24°C (b) 28°C (c) 22°C (d) 25°C

19. The change in potential energy when a body of mass m is raised to a height nR from Earth's surface is (R = radius of the earth,g=acceleration due to gravity on surface of Earth)

(a) mgR$\frac{n}{(n-1)}$ (b) mgR (c) mgR$\frac{n}{(n+1)}$ (d) mgR $\frac{n^2}{(n^2+1)}$

20. An isolated particle of mass m is moving in a horizontal plane (x-y), along the x-axis, at a certain height above the ground. It suddenly explodes into two fragments of masses m/4 and 3m/4. An instant later, the smaller fragment is at y = + 15 cm. The larger fragment at this instant is at

(a) y = –5 cm (b) y = +20 (c) y = +5 cm (d) y = -20 cm

21. One gram of ice is mixed with one gram of steam. At thermal equilibrium the temperature of mixture is

(a) 0^0 C (b) 100^0C (c) 55^0C (d) 80^0C

22. A block of mass 0.50 kg is moving with a speed of 2.0 n s^{-1} on a smooth surface. It strikes another stationary block of mass 1.0 kg and then move together as a single body. The energy loss during the collision is

(a) 0.16 J (b) 1.00 J (c) 0.67 J (d) 0.34 J

23. A boat crosses a river from port A to port B, which are just on the opposite side. The speed of the water is v_W and that of boat is v_B relative to water. Assume $v_B = 2v_W$. What is the time taken by the boat, if it has to cross the river directly on the AB line? [D=width of river]

(a) $\frac{2D}{v_B\sqrt{3}}$ (b) $\frac{\sqrt{3}D}{2v_B}$ (c)$\frac{D}{v_B\sqrt{2}}$ (d) $\frac{D\sqrt{2}}{v_B}$

24. A charged particle of mass m and charge q is released from rest in an electric field of constant magnitude E. The kinetic energy of the particle after time t is

(a) $\frac{E^2q^2t^2}{2m}$ (b) $\frac{2E^2t^2}{qm}$ (c)$\frac{Eqm}{2t}$ (d) $\frac{Eq^2m}{2t^2}$

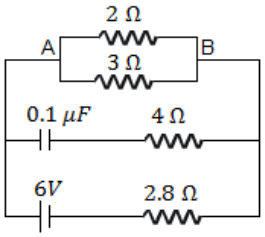
25. The intensity of magnetic field at point X on the axis of a small magnet is equal to the field intensity at another point y on its equatorial axis. The ratio of X and Y from the centre of the magnet will be

(a) 2^{-3} (b) $(2)^{-1/3}$ (c) 2^{3} (d) $2^{1/3}$

26. Two capacitors of 25 µF and 100 µF are connected in series to a source of 120 V. Keeping their charges unchanged, they are separated and connected in parallel to each other. Find out energy loss in the process.

(a) 5.2 J (b) 52 J (c) 50.2 J (d) 0.052 J

27. The steady state current in a 2 Ω resistor when the internal resistance of the battery is negligible and the capacitance of the condenser is 0.1 µF is



(a) 0.6 A (b) 0.9 A

(c) 1.5 A (d) 0.3 A

28. In an experiment, a magnet with its magnetic moment along the axis of a circular coil and directed towards the coil, is withdrawn away from the coil and parallel to itself. The current in the coil, as seen by the withdrawing magnet, is

(a) zero (b) clockwise (c) anticlockwise (d) first (a) then (b)

29. A luminous object is placed at a distance of 30 cm from the convex lens of focal length 20cm. On the other side of the lens, at what distance from the lens a convex mirror of radius of curvature 10 cm be placed in order to have an inverted image of the object coinciding with image formed by lens?

(a) 12 cm (b) 30 cm (c) 50 cn (d) 60 cm

30. Two slits separated by a distance of 1 mm are illuminated with red light of wavelength 6.5×10^{-7} meter. The interference fringes are observed on a screen placed one meter from the slits. The distance between the third dark fringe and fifth bright fringe (excluding central bright)on the same side of center is equal to

(a) 0.65 mm (b) 1.63 mm (c) 3.25 mm (d) 4.8 mm

31. An electric bulb is marked 100 W, 230 V. If the supply voltage drops to 115 V, what is the heat and light energy produced by the bulb in 20 min?

(a) 10 kJ (b) 15 kJ (c) 20 kJ (d) 30 kJ

32. A resistor R and 2 µF capacitor in series are connected through a 200 V direct supply. Across the capacitor is a neon bulb that lights up at 120 V. Find the value of R to make the bulb light up 5 s after the switch has been closed.

(Take log_{10} (2.5)= 0.4)

(a) $1.7 \times 10^{5}\Omega$ (b) $2.7 \times 10^{6}\Omega$ (c) $3.3 \times 10^{7}\Omega$ (d) $1.3 \times 10^{4}\Omega$

33. A coil of resistance 400 Ω is placed in a magnetic field. If the magnetic flux ϕ(wb) linked with the coil varies with time t(s) as $\phi = 50t^2 + 4$. The induced current in the coil at t = 2 s is

(a) 0.5 A (b) 0.1 A (c) 2 A (d) 1 A

34. An electromagnetic wave of frequency 3 MHz passes from vacuum into a dielectric medium with permittivityε_r = 4 and μ_r=1, then

(a) the wavelength and frequency both remain unchanged
(b) the wavelength is doubled and the frequency remains unchanged
(c) the wavelength is doubled and the frequency becomes half
(d) the wavelength is halved and the frequency remains unchanged.

35. The *rms* value of the electric field of the light coming from the sun is 720 N C^{-1}. The average total energy density of the electromagnetic wave is

(a) 3.3×10^{-3} J m^{-3} (b) 4.58×10^{-6} J m^{-3}
(c) 6.37×10^{-9} J m^{-3} (d) 81.35×10^{-12} J m^{-3}

36. In Young's double slit experiment, one of the slits is wider than the other, so that the amplitude of the light from one slit is double that from the other slit. If I_m be the maximum intensity, the resultant intensity when they interfere at phase difference ϕ is given by

(a) $\frac{I_m}{3}\left(1+2\cos^2\frac{\phi}{2}\right)$ (b) $\frac{I_m}{5}\left(1+4\cos^2\frac{\phi}{2}\right)$

(c) $\frac{I_m}{9}\left(1+8\cos^2\frac{\phi}{2}\right)$ (d) $\frac{I_m}{9}\left(8+\cos^2\frac{\phi}{2}\right)$

37. A compound microscope has an eye piece of focal length 10 cm and an objective of focal length 4 cm. Calculate the magnification, if an object is kept at a distance of 5 cm from the objective, so that the final image is formed at the least distance of distinct vision 20 cm.

(a) 12 (b) 11 (c) 10 (d) 13

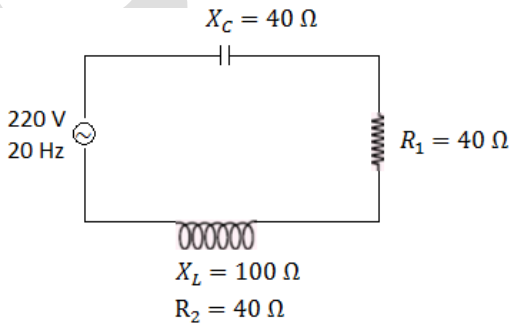
38. In a galvanometer 5% of the total current in the circuit passes through it and remaining through shunt. If the resistance of the galvanometer is G, the shunt resistance S connected to the galvanometer is

(a) 19G (b) $\frac{G}{19}$ (c) 20G (d) $\frac{G}{20}$

39. The power factor of the circuit as shown in figure is

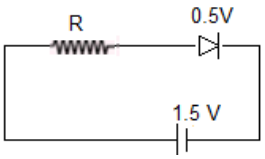
(a) 0.2 (b) 0.4

(c) 0.8 (d) 0.6



40. The diode used in the circuit shown in the figure has a constant voltage drop at 0.5 V at all currents and a maximum power rating of 100 milli watts.

What should be the value of the resistor R, connected in series with diode, for obtaining maximum current?



(a) 6.76 Ω (b) 20 Ω (c) 5 Ω (d) 5.6 Ω

41. The half-life of a radioactive isotope X is 50 years. It decays to another element Y which is stable. The two elements X and Y were found to be in the ratio of 1 : 15 in a sample of a given rock. The age of the rock was estimated to be

(a) 100 years (b) 150 years (c) 200 years (d) 250 years

42. On shining light of wavelength 6.2×10^{-6} m on a metal surface photo-electrons are emitted. The work function of the metal is 0.1 eV. Find the kinetic energy of a photo-electron (in eV)

(a) 0.1 (b) 0.2 (c) 0.3 (d) 0.4

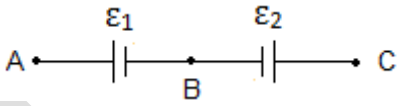
43. The far point of a near sighted person is 6.0 m from her eyes, and she wears contacts that enable her to see distant objects clearly. A tree is 18.0 m away and 2.0 high. How high is the image formed by the contacts?

(a) 1.0 m (b) 1.5 m (c) 0.75 m (d) 0.50 m

44. In an experiment on photoelectric emission from a metallic surface, wavelength of incident light is 2×10^{-7} m and stopping potential is 2.5 V. The threshold frequency of the metal is approximately (Charge of electron e = 1.6×10^{-19} C, Planck's constant h = 6.6×10^{-34} J s)

(a) 12×10^{15} Hz (b) 9×10^{15} Hz (c) 9×10^{14} Hz (d) 12×10^{13} Hz

45. Two cells of emf ε_1 and ε_2 ($\varepsilon_1 > \varepsilon_2$) are connected as shown in figure. When a potentiometer is connected between A and B, the balancing length of the potentiometer wire is 300 cm. on connecting the same potentiometer between A and C, the balancing length is 100 cm. The ratio $\varepsilon_1 : \varepsilon_2$ is



(a) 3. : 1 (b) 1 : 3 (c) 2 : 3 (d) 3 : 2

PART – B (CHEMISTRY)

46. Excess of HCl is reacted with 6.5g of zinc. The hydrogen liberated is burnt with oxygen. The mass of water formed is (Atomic mass of Zn = 65)

(a) 0.2g (b) 0.9g (c) 1.8g (d) 3.6g

47. A metal forms three oxides A, B and C in n, n+1 and n+2 oxidation states. The oxide which has highest percentage of metal is

(a) A (b) B (c) C (d) Cannot be predicted

48. The rate of diffusion of a gas of molecular weight 72 is 10ml per sec. The rate of diffusion of hydrogen at same temperature and pressure is

(a)10 ml (b)30 ml per sec. (c) $60\sqrt{2}$ ml per sec. (d) 60 ml per sec.

49. Mole fraction of benzene in the vapours over a solution of benzene and toluene is 0.4. If the original vapour pressure of benzene is 150 mm Hg and toluene is 50 mm Hg, the mole fraction of benzene in the solution is

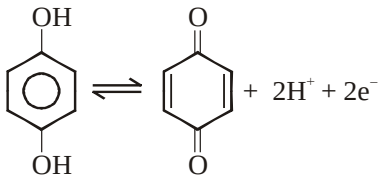
(a) 0.4 (b) 0.75 (c) 0.25 (d) 0.18

50. EMF(reduction) of the half cell $NaOH_{(0.001M)}/H_{2(1atm)}$(Pt) at 298 K is
(a) –0.1773 (b) –0.6501 (c) Zero (d) 0.0591

51. On passing some amount of charge through an aqueous solution of Na_2S between inert electrodes at 273 K, one atmosphere, the volume of hydrogen released is 560 ml. The mass of sulphur deposited is
(a) 16 g (b) 3.2 g (c) 0.8 g (d) 6.4 g

52. When an Ideal solution is formed
(a) ΔS_{mix} is zero (b) ΔH_{mix} is zero
(c) Rarult's law is not followed (d) All of these

53. At pH = 2, $E^{\circ}_{Quinhydrone}$ = 1.30 V, $E_{Quinhydrone}$ will be :



(a) 1.36 V (b) 1.30 V (c) 1.42 V (d) 1.20 V

54. Which of the following compounds gives propyne on treatment with water ?
(a) CaC_2 (b) Li_2C_2 (c) Al_4C_3 (d) Mg_2C_3

55. The shape around N in $N(SiH_3)_3$ is
(a) Pyramidal (b) Tetrahedron (c) Plane triangular (d) T-Shaped

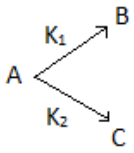
56. Red Phosphorus can be converted to white phosphorus by
(a) Heating at 250ºC in absence of air
(b) Evaporating in inert atmosphere and then condensing in water
(c) Heating under high pressure
(d) Any of these

57. Clathrate compounds are best formed by
(a) He (b) Ne (c) Kr (d) All of these

58. When a manganese salt is heated with boric anhydride, a coloured bead is formed which is due to the formation of
(a) $Mn_2B_4O_7$ (b) MnO (c) $Mn(BO_2)_2$ (d) Mn metal

59. The most stable +2 oxidation state is for
(a) Si(b) Ge (c) Sn (d) Pb

60. A substance undergoes first order decomposition. The decomposition follows two parallel first order reactions as :



$K_1 = 12.6 \times 10^{-4}\ sec^{-1}$ and $K_2 = 3.8 \times 10^{-5}\ sec^{-1}$

The percentage distribution of B and C are :

(a) 80% B and 20% C
(b) 76.83% B and 23.17% C
(c) 90% B and 10% C
(d) 60% B and 40% C

61. The most stable complexes are formed according by Irving william order by

(a) Co^{2+} (b) Ni^{2+} (c) Cu^{2+} (d) Fe^{2+}

62. The glucose give the osazone as product when reacted with

(a) one mole of phenyl hydrozine
(b) two mole of phenyl hydrazine
(c) three mole of phenyl hydrazine
(d) four moles of phenyl hydrazine

63. Bakelite is made by the action of

(a) Phenol and formaldehyde
(b) Melamine and formaldehyde
(c) Urea and formaldehyde
(d) Ethylene glycol and phthalic acid

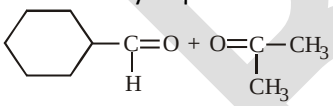
64. Which of the following group is a chromophore ?

(a) –N = N– (b) –OH (c) $-CH_3$ (d) $-NH_2$

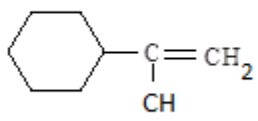
65. The optically inactive compound amongst the given compound is

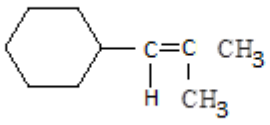
(a) 2-chlorobutane
(b) 2-hydroxypropanoic acid
(c) trans-1, 2-dichlorocyclopropane
(d) 2-Amino-2-methyl propanoic acid

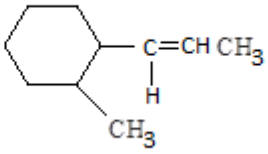
66. The ozonolysis product of alkene is

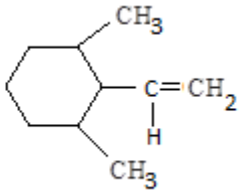


What is the structure of alkene?

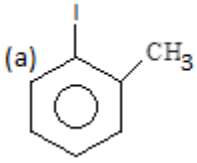
(a) 

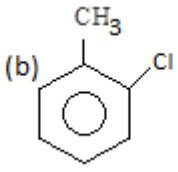
(b) 

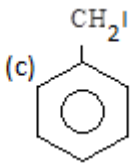
(c) 

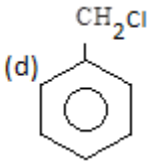
(d) 

67. Reaction of toluene with I-Cl in presence of $AlCl_3$ in cold and dark gives

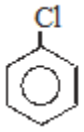
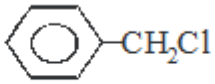
(a) 

(b) 

(c) 

(d) 

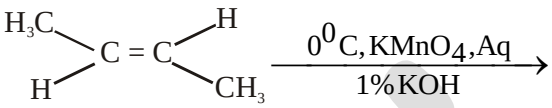
68. The hydrolysis of 'C–Cl' bond is easiest in

(a)  (b) $CH_2 = CHCl$ (c)  (d) $\underset{\underset{Cl}{|}}{CH_2CH} = CH_2$

69. Isobutyl alchol $\xrightarrow[\text{heat}\ -H_2O]{\text{con c. } H_2SO_4}$ A $\xrightarrow{HCl}$ B

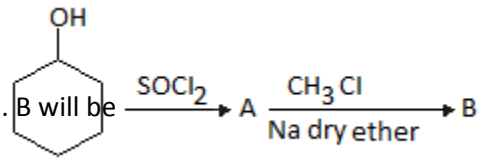
(a) 1-chloro-2-methylpropane (b) 2-chloro-2-methylpropane
(c) 2-chlorobutane (d) 1-chlorobutane

70. The product of given reaction is

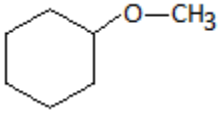


Product

(a) Meso
(b) Mixture of eantiomers (Racemic mixture)
(c) Molecule having no asymmetric carbon
(d) Reaction will not occur

71. 

(a) Methyl cyclohexane (b) o- methyl cyclohexanol

(c)  (d) None of these

72. $CH_3COCl \xrightarrow[BaSO_4]{H_2,\ Pd} CH_3-\underset{\underset{H}{|}}{\overset{\overset{O}{\|}}{C}}$

The above reaction is called
(a) Rosenmund reaction (b) Hunsdiecker reaction
(c) Reformatsky reaction (d) Boveaultblanc reaction

73. $CH_3-\underset{\underset{CH_3}{|}}{CH}-CH=CH_2 \xrightarrow[H_2O]{(CH_3COO)_2Hg;\ B\ is} A \xrightarrow[OH^-]{NaBH_4} B$

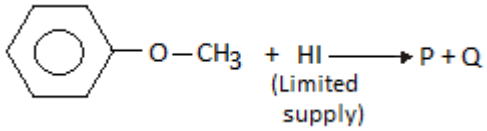
(a) $CH_3-\underset{\underset{CH_3}{|}}{CH}-\overset{\overset{OH}{|}}{CH}-CH_3$

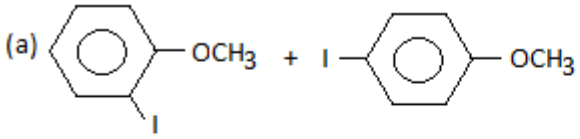
(b) $CH_3-\underset{\underset{CH_3}{|}}{\overset{\overset{OH}{|}}{CH}}-CH_2-\underset{\underset{OH}{|}}{CH_2}$

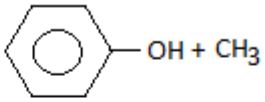
(c) $CH_3-\underset{\underset{CH_3}{|}}{\overset{\overset{OH}{|}}{C}}-CH_2-CH_3$

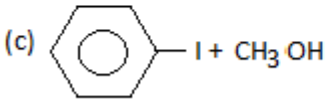
(d) $CH_3-\underset{\underset{CH_3}{|}}{C}=CH-CH_3$

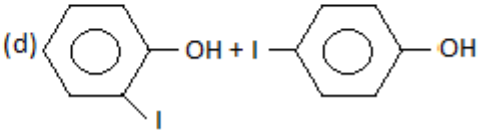
74. The major product 'P' and 'Q' for given reaction is



(a) 

(b) 

(c) 

(d) 

75. $CH_3-CH\begin{cases}O-CH_2\\ O-CH_2\end{cases} \xrightarrow{dil\ HCl} A + B$ A and B are

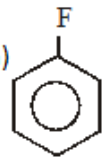
(a) $CH_3COOH + \underset{\underset{COOH}{|}}{COOH}$

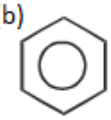
(b) $CH_3-\overset{\overset{O}{\|}}{C}-H + CH_2=CH_2$

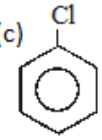
(c) $CH_3-\overset{\overset{O}{\|}}{C}-H + HO-CH_2-CH_2-OH$

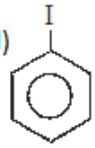
(d) $CH_2=CH_2 + HOCH_2-CH_2-OH$

76. The least reactive compound towards electrophilic substitution with given electrophile is

(a) 

(b) 

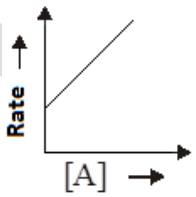
(c) 

(d) 

77. $R-CH_2-\overset{\overset{O}{\|}}{C}-NH_2 \xrightarrow[heat]{KOH/Br_2}$ Product is

(a) $R-CH_2-CH_2-NH_2$ (b) $R-\overset{\overset{O}{\|}}{C}-CH_2-NH_2$ (c) $R-CH_2Br$ (d) $R-CH_2NH_2$

78. The graph of a reaction is

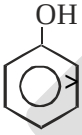


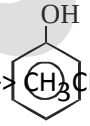
Order with respect to A is

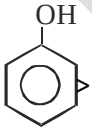
(a) Zero (b) 1

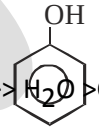
(c) – 1 (d) 2

79. The correct order of acidic strength is

(a)  > HCOOH > H_2O > CH_3-CH_2OH

(b) HCOOH >>  > CH_3CH_2OH > H_2O

(c)  > HCOOH > CH_3CH_2OH > H_2O

(d) HCOOH >> H_2O >  > CH_3-CH_2OH

80. Increasing the temperature does not effect the rate of a reaction. The reaction is

(a) Exothermic (b) Endothermic

(c) Such reaction is not possible (d) Radioactive disintegration

81. The shape of orthosilicate ion (SiO_4^{4-}) is

(a) Tetrahedral (b) Trigonalplanar (c) Squareplanar (d) Square pyramidal

82. If two ice cubes are placed together, the force of attraction between them is

(a) Vandarwaal force (b) Hydrogen bond

(c) Dipole dipole interaction (d) Covalent bond

83. Hybridization of Boron in B_2H_6 is

(a) sp^3 (b) sp^2
(c) sp (d) Pure p orbitats are used

84. Aqueous solution of 0.004 M Na_2SO_4 and 0.01 M glucose are isotonic. The degree of dissociation of Na_2SO_4 is

(a) 25% (b) 60% (c) 75% (d) 85%

85. One mole of an ideal gas at 300 K is expanded isothermally from an initial volume of 1 litre to 10 litres. The Δ U for this process is (R = 2 cal mol^{-1} K^{-1})

(a) 163.7 cal (b) Zero (c) 1381.1 cal (d) 540 cal

Directions (for Q.86 - 88): These questions consists of two statements each, printed as Assertion (A) and Reason (R). While answering these questions you are required to choose any one of the following four responses.

(a) If both Assertion and the Reason are true and the Reason is a correct explanation of the Assertion.
(b) If both the Assertion and the Reason are true but the Reason is not a correct explanation of the Assertion.
(c) If the Assertion is true but the Reason is false.
(d) If both the Assertion and the Reason are false.

86. **A :** Oxides are more ionic then corresponding sulphides
R : Oxygen has higher electron affinity than sulphur

87. **A :**Both cyclopropane and propene give addition reactions readily.
R : Cyclopropane and propene are isomers of each other.

88. **A :**Nitration of aniline can only be done by protecting $-NH_2$ group through acetylation.
R : Acetylation of aniline results in the increase of electron density at the benzene ring.

89. 4 mole of A are mixed with 4 mole of B, then 2 mole of C are formed at equilibrium, according to the reaction, A + B ⇌ C + D.
The equilibrium constant is :
(a) 4 (b) 1 (c)$\sqrt{2}$ (d) $\sqrt{4}$

90. The correct statement about ClF_3 molecule is

(a) sp^2hybridisation, planar molecule, no lone pair of electrons
(b) sp^3dhybridisation, T-shaped molecule, two lone pair of electrons
(c) sp^3dhybridisation, T-shaped molecule, three lone pair of electrons
(d) dsp^3hybridisation, T-shaped molecule three lone pair of electrons

PART – C (BIOLOGY)

91.It has collection of preserved plant specimens

I. Herbarium II. Botanical Gardens III.MuseumIV.Manuals
(a) I only (b) II, III (c) I, III (d) III, IV

92.[A]: Plants are self-conscious
[R]: Plants exhibit awareness to surroundings.
(a) Both A and R are true (b) Both A and R are false
(c) A is true but R is false (d) A is false but R is true

93.False statement regarding Protista
(a)They are primarily aquatic
(b)Membrane bound cell organelles present
(c)They include plant like, fungi like and animal like organisms
(d)All of these have cell walls.

94.Fungi were given the status of Kingdom by
(a) Whittaker (b) Haeckel (c) carlwoese (d) Copeland

95.Sex organs are absent in
I. Basidiomycetes II. Ascomycetes III. zygomycetes IV. Deuteromycetes
(a) II,IV (b) III,IV (c) II, III (d) I, IV

96.All organisms belonging to the following kingdoms have cell wall
I. Monera II. Protista III. Fungi IV. Plantae
(a) All except II and III (b) All except I and II (c) All except I and III (d) All except I, II, III

97.Isogametes are seen in
A. Chlamydomonas B. Spirogyra C. Volvox D. Cladophora
(a)A & B (b)B& C (c)A, B & D (d)B, C & D

98.Choose the correct statement
(a) Heterospory is more common in Pteridophytes
(b) Homospory is more common in Pteridophytes
(c) Pteridophytes show only heterospory
(d) gametophyte of pteridophyte is dependent on sporophyte.

99.What is common among tapeworm, liver fluke and planarian?
(a) They exhibit metamerism (b) They all have coelom
(c) They are all found in gut (d) They all have flattened body

100.Some characters with reference to arthropods are given below, mark wrong one
(a) Circulatory system is of open type
(b) Mostly dioecious
(c) Mostly oviparous with only external fertilization
(d) Development may be direct or indirect

101.When ovary is one chambered, the possibility of placentation is
A. Basal B. Marginal C. Axile D. Free central
(a)A, B & C (b)B, C & D (c)A, B, C & D (d)A, B & D

102.True statements among the following
I : All complete flowers are bisexual.
II : All bisexual flowers are complete.
III :Achlamydeous flowers are incomplete.
(a) I & II (b) II & III (c) I & III (d) Only I

103.Eyes on potato represents
(a) Scaly leaves (b) Internode (c) Lateral branch (d) Node

104. Mark the mismatched pair
(a) Medicine – Aloe, muliathi (b) Edible oil – Soyabean, groundnut
(c) Ornamentals – Lupin, Petunia (d) Dyes – Sesbania, Trifolium

105.Beneficial element but not an essential element in higher plants
(a)Nitrogen (b)Calcium (c)Nickel (d)Silicon

106.True statement regarding glycolysis is
A. No oxygen is used in this process B. Glucose does not undergo oxidation
C. Carbon dioxide is released in the process D. Glycolysis occurs in cytoplasm
(a)A & B (b)A& C (c)C & D (d)A & D

107.Plants are classified into C3 and C4 on the basis of
(a)Leaf anatomy (b) Number of cotyledons
(c)First CO_2 fixation product (d)Metabolism in the mesophyll cells of leaves

108.True statement regarding plasma membrane is
(a)Non-polar tail of the lipids is protected from the aqueous environment
(b)Polar heads of the lipids are hydrophobic and are present outside
(c)Non-polar tail of the lipids is hydrophilic and is present outside
(d)Lipids are present in single layer which is made up of phosphoglycerides

109.Assertion(A): In Angiosperms, endosperm is always triploid
Reason(R): Endosperm results from syngamy
(a)Both A & R are true (b)Both A & R are false.
(c)A is true, R is false (d)A is false, R is true

110.False statement regarding transport phenomena in plants is
(a)Transport in xylem is unidirectional (b)Transport in phloem is bi-directional
(c) sugars are passively transported into sieve tube (d)Active transport is uphill transport

111.True statement regarding achievement of Plant Breeding in India
(a) Saccharumofficinarum grows in North India (b)Semi-dwarf variety IR-8 developed
(c)Paddy variety of 'Jaya' & 'Ratna' were developed (d)All are correct

112. The "sodium-potassium pump" pumps
(a)sodium ions out and potassium ions in (b)sodium ions in and potassium ions out

(c)sodium and potassium ions in (d)sodium and potassium ions out

113. Which of the following hormones is not released by the anterior pituitary?
(a)melanocyte-stimulating hormone (b)gonadotropin-releasing hormone
(c)thyroid-stimulating hormone (d)growth hormone

114. Mature sclerenchyma cells are
(a)suberized and contain no living protoplasts (b)thin walled and often contain chloroplasts
(c)lignified and contain living protoplasts (d)lignified and contain no living protoplast

115. Which of the following statements is NOT correct about reproduction in flowering plants?
(a)The pollen grain, or male gametophyte, will contain two cells, the generative cell and the tube cell.
(b)The female gametophyte, or embryo sac, consists of eight haploid nuclei, one of which is the egg and two polar nuclei.
(c)One sperm nucleus within the pollen tube will migrate to and fertilize the egg, forming a zygote.
(d)Another sperm nucleus within the pollen tube will migrate to and unite with the polar nuclei, producing a diploid endosperm

116. Identify the wrong pair of statements
I) During plant succession, some species colonise an area and populations become more numerous,whereas populations of other species decline and even disappear
II) Both hydrarch and xerarch successions lead to mesic conditions
III) Secondary succession is a slow process when compared to primary succession
IV) In the successive seral stages, there is no change in the diversity of species of organisms
(a)II, III (b) I, II (c) III, IV (d) I, III

117. Haploid plantlets can be produced by
(a)Embryo culture (b)Pollen culture (c)Cotyledon culture (d)Meristem culture

118. Association between sea Anemone and clown fish is that of
(a)Parasitism (b)Commensalism (c)Symbiosis (d)Amensalism

119. In the breakdown of the ozone layer, ozone directly reacts with
(a)ultraviolet light (b)chlorine atoms (c)oxygen atoms (d)CFC molecules

120. Match the following

A	B
a)Sudden surge of LH	1) menses(flow)
b)Shedding of endometrium	2) proliferative phase
c)High levels of progesterone	3)secretory(luteal phase)
d) Production of estradiol	4) ovulation

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

121. RNA intereference is a mechanism for silencing gene expression at the
(a)level of replication. (b)level of transcription.
(c)post-transcriptional level (d)level of translation

122. Transverse binary fission occurs in this organism
(a) Paramecium (b) ceratium (c) Amoeba (d) euglena

123. Which of the following is not a major contributor to the greenhouse effect?
(a)carbon dioxide (b)carbon monoxide (c)chlorofluorocarbons (d)methane

124.In the formation of polynucleotide chain, the number of different types of nucleotides that participate are
(a)4 (b)8 (c)5 (d)9

125.Which of the following statements are true regarding Griffith's Experiment?
I. Biochemical nature of genetic material is known.
II. Experimental bacteria is Streptococcus
III. Heat killed virulent bacteria is transformed.
IV. S strain is virulent as it lacks capsule
(a)I & II (b)II, III & IV (c)Only II (d)I, II & IV

126.Assertion (A): DNA is dependent on RNA for the synthesis of proteins.
Reason(R): DNA does not have code for protein synthesis.
(a)Both A and R are true (b)Both A and R are false
(c)A is true, R is false (d)A is false, R is true

127.Which among the following statements regarding phytohormones is true?
(a)They are produced only by the plant cells (b)All plant growth regulators promote differentiation
(c) Auxins were first isolated from plants. (d) Kinetin does not occur naturally in plants.

128. Radial, Collateral, and Bicollateral vascular bundles are present respectively in anatomy of
(a) Dicot and Monocot roots, dicot and monocot stem, and cucurbita stems
(b) Dicot and Monocot stem, dicot and monocot root and cucurbita stem
(c) Dicot and Monocot Root, cucurbitastem , dicot and Monocot stem
(d) Dicot and monocot stem, cucurbita stems and Dicot and monocot root

129. Biotechnology medical products include
(a)insulin (b)growth hormone
(c)tpa (tissue plasminogen activator) (d)all of these

130. Tall (T) is completely dominant over dwarf (t). Red flower colour (R) is incompletely dominant over white (r), the heterozygote being pink. Plant having genotype of TtRr is self pollinated. What would be the proportion of plants with both dwarf and pink characters in its progeny ?
(a)2 out of 16 plants (b)one out of 16 plants
(c)9 out of 16 plants (d)3 out of 16 plants

131.About seven percent of carbon dioxide is transported to the lungs
(a) As carbamino compounds through RBC (b) In a dissolved state through the plasma
(c) As bicarbonate ions through RBC (d) As bicarbonate ions through the plasma

132. Select the correct matching of the type of the joint with the example in human skeletal system:
(a) Fibrous joint - between adjacent vertebrae in the vertebral column

(b) Cartilaginous joint – sutures between the cranial bones
(c) Pivot joint – between carpal bones in the wrist
(d) Saddle joint – between carpal and metacarpal of the thumb

133. Identify the correct matching of a hormone with its source and function.
(a) PTH – Parathyroid glands; decreases calcium levels in the blood
(b) Melatonin – Pituitary gland; maintains sleep-wake cycle
(c) Cortisol – adrenal cortex; carbohydrate metabolism
(d) Renin – JG cells of efferent arteriole; increases GFR

134.Hormones produced in women only during pregnancy are
(a) Oestrogen, progesterone, FSH and LH
(b) oestrogen, oxytocin and prolactin
(c) Relaxin, oxytocin and progesterone
(d) Human chorionic gonadotropin, human placental lactogen and relaxin

135. Which of the following is a contraceptive that contains progesterone?
(a) LNG-20 (b) Multiload-375 (c) Saheli (d) Lippes loop

136. Active sites are unmasked when calcium binds with a subunit of
(a) Troponin (b) Tropomyosin (c) Actin (d) Myosin

137. Assisted reproductive technology, GIFT involves transfer of
(a) Ovum collected from a donor into the fallopian tube of another woman
(b) The zygote into the fallopian tube.
(c) The early embryos with upto 8 blastomeres into the uterus.
(d) Sperm from husband or a donor into the cytoplasm of the ovum.

138. In a population of 10,000 individuals, 6,400 individuals are of the genotype 'AA', 3,200individuals are of the genotype 'Aa' and the remaining individuals are of the genotype 'aa'.Based on this data, the frequency of the allele 'A' in the population is
(a) 0.2 (b) 0.4 (c) 0.7 (d) 0.8

139. Which one of the following statements is not correct?
(a) Scala media is filled with endolymph.
(b) At the base of the cochlea, the scalavestibuli ends at the oval window.
(c) Ampulla contains a projecting ridge called macula.
(d) Organ of Corti contains hair cells covered by a tectorial membrane.

140. What is true about ribosomes
(a) The prokaryotic ribosomes are 80 S, where "S" stands for sedimentation co-efficient
(b) These are composed of ribonucleic acid and protein
(c) These are found only in eukaryotic cells
(d) power house of the cell has 80 Sribosomes

141. Read the following statements

I) Gamma diversity is the diversity of the entire landscape.
II) species diversity increases as we move away from the equator towards the poles.
III) Genetic diversity decreases with environmental variability.
IV) Western Ghats have a greater amphibian species diversity than the Eastern Ghats
Which among the above are true?
(a) I & IV (b) II & III (c) I & III (d) II & IV

142. A colorblind man with hypertrichosis married a woman whose mother is homozygousnormal visioned and father is colorblind. Then in their progeny
(a) All the sons are colorblind but without hyper trichosis
(b) Half of the male children are with both colorblindness and hypertrichosis
(c) All the females are normal visioned
(d) 50 % of the progeny is colorblind but without hypertrichosis

143.Read the following statements
I) Directional selection occurs when natural selection favours one extreme of continuous variation.
II)Disruptive selection occurs when natural selection favours both extremes of continuous variation.
III) In directional selection, a population's genetic variance shifts toward a new phenotype when exposed to environmental changes.
IV)Random changes in gene frequencies due to chance in large population is called genetic drift.
True statements are
(a) All except II (b) All except III (c) All except IV (d) All are true

144. In RNA, thymine replaced
(a)Purine (b)Pyrimidine (c)CH3 group (d)Cytosine

145.Assertion(A): All plants of F1 generation of Mendel's monohybrid cross look alike.
Reason(R): Parents are pure heterozygotes
(a)Both A and R are correct and R is the correct explanation of A.
(b) Both A and R are correct but R is not the correct explanation of A.
(c)A is correct, R is false
(d)A is false, R is correct

146. Which of the following steps is catalysed by Taq DNA polymerase in PCR reaction?
(a) Denaturation of template DNA
(b) Annealing of primers to template DNA
(c) Extension of primer
(d) Rejoining of template DNA.

147.Which one of the following statements is wrong?
(a) When pollen is shed at the two-celled stage, double fertilization does not take place
(b) Vegetative cell is larger than generative cell
(c) In some plants, pollen grains remain viable for months
(d) Intine is made up of cellulose and pectin

148. In the vector pBR322, restriction site of Pvu II is present in

(a) amp^R (b) tet^R (c) rop (d) ori

149.All of the following statements are correct w.r.t. heroin, except
(a) It binds to specific opioid receptors present in our central nervous system and gastrointestinal tract
(b) It is chemically diacetylmorphine
(c) It is formed by ethylation of cannabinoids
(d) It is a depressant and slows down body functions

150. Which of the following is a correct match w.r.t.pathogen and its site of attack (body cell/organ) in the human body?
(a) Ascaris - Lymphatic vessels (b) Trichophyton - Lungs
(c) Plasmodium - Hepatocytes and RBCs (d) Entamoeba - Small intestine

151. Which of the following factors can change allelic frequency?
A. Gene flow B. Natural selection C. Random mating D. Founder effect E. Genetic recombination
(a) A, B, C, D, E (b) A, B, E (c) C, D, E (d) A, B, D, E

152.Which of the following is correct match w.r.t. human ancestor, its cranial capacity and certain feature?

Ancestor	**Cranial capacity**	**Feature**
(a) Australopithecus	500CC	Hunted with stone weapons,ate fruit
(b) Homo habilis	650-800CC	First human like-being
(c) Homo erectus	900CC	Probably did not eat meat

(d) More than one option is correct

153. Find the incorrect statement w.r.t. pregnancy and embryonic development in humans.
(a) Placenta is formed by interdigitation of chorionic villi and uterine tissue
(b) Human chorionic gonadotropin(hCG)is produced from placenta.
(c) The inner cell mass contain stem cells which have the potency to give rise to all the tissues and organs
(d)oxytocin is produced from pituitary.

154. Consider the following statements A–D with certain blanks. Find the option which correctly fills up these blanks.
A. The protein portion of enzyme is called --------(i)
B. Prosthetic groups are---------- (ii) bound to the protein part of enzyme.
C--------- (iii) is the prosthetic group of enzyme catalase.
D----------(iv) are nucleic acids with catalytic power.
(a) (i) Co-factor (ii) Tightly(iii) Haem (iv) Ribozyme
(b) (i) Apoenzyme (ii) Loosely(iii) NAD (iv) Ribonuclease
(c) (i) Co-factor (ii) Loosely(iii) NAD (iv) Ribonuclease
(d) (i) Apoenzyme (ii) Tightly(iii) Haem (iv) Ribozyme

155. How many of the given statements are correct?
A. Water is the most abundant chemical in the living organisms.
B. A protein is a heteropolymer and not a homopolymer.
C. In polysaccharide,left end is called reducing end & right end is called non-reducing end.
D. A nucleoside is the building block of nucleic acids, which consist of a heterocyclic compound, a monosaccharide and a phosphate.
(a) One (b) Two (c) Three (d) Four

156.Match the following structures of cockroach in column I with their location provided in column II.

Column I	Column II
a. Testes in males	(i) 6th abdominalsegment
b. Mushroom gland	(ii) 2nd-6th abdominalsegment
c. Spermatheca	(iii) 6th-7th abdominal segment
d. Ovaries in females	(iv) 4th-6th abdominalsegment

(a) a(ii), b(iii), c(i), d(iv) (b) a(iv), b(iii), c(i), d(ii)
(c) a(ii), b(i), c(iii), d(iv) (d) a(iii), b(i), c(iv), d(ii)

157. Which of the following statements are correct?
A. The chemical process of digestion is initiated in oral cavity by the hydrolytic action of thecarbohydrate splitting enzyme, the salivary amylase.
B. Lipases are absent in secretion of gastric glands.
C. Bile helps in emulsification of fats.
D. Nucleases in the succusentericus acts on nucleic acids to form nucleotides and nucleosides.
(a) A, B, C (b) A, C (c) C, D (d) A, C, D

158. Which of the following would be least likely to be found in the glomerular filtrate?
(a)plasma proteins (b)glucose and amino acids (c)water (d)urea

159.Which one of the following statements is true ?
(a) Perisperm is residual and persistent endosperm in seed
(b) Zygote gives rise to the pro embryo and subsequently to the heart-shaped, globular andmature embryo in dicots
(c) In monocots, hypocotyl has a shoot apex and a few leaf primordia enclosed in a hollow foliar structure
(d) Transformation of ovules into seed and ovary into fruit proceeds simultaneously

160.These cells of angiosperms are involved in meiosis
(a) Cells that give rise to microspores
(b) Cells that give rise to polar nuclei
(c) cell involved in the formation of male gametes
(d) Cell in which diploid secondary nucleus is present

161.Smooth muscle fibres
I. are fusiform &uninucleated cells
II. Are involuntary in function
III. Do not perform slow and sustained contractions
IV. Do not show striations due to regular arrangement of actin and myosin filaments.
Choose the incorrect set of statements.
(a) I & II (b) III& IV (c) II & III (d) I & IV

162.Omnis 'cellula-e-cellula' is stated by
(a) Schleiden (b) Schwann (c) Virchow (d) Robert Hooke

163.The most abundant component of a cell after water is
(a)Lipid (b)Cellulose (c)lipid (d) Protein

164.Which of the following statements about mitosis is NOT correct?
(a)Mitosis is cell division that produces two daughter cells.
(b)Each daughter cell formed by mitosis has the same number of chromosomes as the parent cell.
(c)The parent cell and the daughter cells are genetically identical.
(d)During mitosis, the centromeres divide and the sister chromatids stay together.

165.Which of the following occurs in meiosis but not in mitosis?
(a) Attachment of spindle fibres to the kinetochore.
(b) Pairing of homologous chromosomes at the metaphase plate.
(c) Replication of DNA prior to the start of cell division.
(d) Separation of sister chromatids at anaphase.

166.Which of the following comparisons is NOT correct?
(a)prophase--chromosomes appear
(b)telophase--spindle appears
(c)metaphase--chromosomes aligned at the equator
(d)anaphase--daughter chromosomes move toward the poles

167.Pentose sugars formed in Calvin's cycle
A. glyceraldehyde phosphate B. xylulose C. Erythrose D. ribulose E. ribose
(a) A B & E (b) B C & D (c) B D & E (d) D & E

168.Lumen of the thylakoid is associated with
(a)ATP formation (b) O2 evolution (c) NADPH 2 formation (d) CO2reduction.

169.The first formed substance in Kreb's cycle is
(a) OAA (b) Citric acid (c) Acetyl Co-A (d) Pyruvic acid

170.Match the following

A. Sino – Atrial node	1. Posterior side of interatrial septum
B. Atrio ventricular node	2. Wall of ventricles
C. Bundle of His	3. Wall of right atrium
D. Purkinje fibres	4. Inter ventricular septum

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

171.Match the following with regard to ECG

1. P-wave	A. Depolarization of inter ventricular septum
2. Q-wave	B. Rapid ventricular depolarization
3. T-wave	C. Ventricular repolarization
4. QRS complex	D. Atrial depolarization

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

172. Hypothalamus is the part of
(a)Rhombencepahalon (b)mesencephalon
(c)prosencephalon (d)metencephalon

173.Which one of the following pairs of organs includes only the endocrine glands?
(a) Adrenal and Ovary (b) Parathyroid and Adrenal
(c) Pancreas and Parathyroid (d) Thymus and Testes

174.An example of in situ conservation is
(a) Seed bank (b) Zoological park (c) In vitro fertilization (d) Sacred groove

175.Which of the following cells undergo meiosis – I ?
(a)Spermatogonia (b) Spermatid
(c) secondary spermatocyte (d) Primary spermatocyte

176.Which one of the following conditions correctly describes the manner of determining the sex?
(a) Homozygous sex chromosomes (ZZ) determine female sex in birds
(b) XO type of sex chromosomes determine male sex in grasshopper
(c) XXY condition in humans as found in turners syndrome, determines female sex
(d) Homozygous sex chromosomes (XX) produce male in Drosophila

177. Study the following lists

List - I	**List – II**
A) BOD	I) Treatment of sewage
B) KVIC	II) Measure of organic matter in water
C) LAB	III) Biological methods for controlling plant diseases
D) STPS	IV) Increases vitamin 12 B
	V) Production of biogas

The correct match is

A B C D	A B C D
(a) III V I II	(b) II V IV I
(c) V I IV II	(d) II V I IV

178.Match the following

List - I	**List – II**
A) RNA i	I) Cotton bollworms
B) ELISA	II) Meloidogyne resistance
C) cryIAc	III) Antigen – antibody interaction
D) cry I Ab	IV) Corn borer

(a)A-II,B- III,C-IV,D- I (b)A-IV,B- III,C-II,D- I
(c)A-I,B- II,C-III,D- IV (d)A-II,B- III,C-I,D-IV

179.Match the following

EXTINCT	**ANIMAL COUNTRY**
A) Thylacine	I) Russia
B) Dodo	II) Africa
C) Steller's sea cow	III) Mauritius
D) Quagga	IV) Australia

A B C D	A B C D	A B C D	A B C D
(a) IV II III I	(b) IV III I II	(c) III IV II I	(d) III II I IV

180.In a biological community,Gause's principle explains

(a)competition among different species under unlimited resources

(b)competitive exclusion of an inferior species due to the limited natural resources

(c)coexistence of closely related species due to resource partitioning

(d)intra specific competition due to limited natural resources