SUBJECT : PHYSICS	DAY – 2
SESSION : MORNING	TIME : 10.30 A.M. TO 11.50 A.M.

MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
60	80 MINUTES	70 MINUTES

MENTION YOUR CET NUMBER					QUESTION BOOKLET DETAILS	
					VERSION CODE	SERIAL NUMBER
					A - 1	472657

DOs :

1. Check whether the CET No. has been entered and shaded in the respective circles on the OMR answer sheet.
2. This Question Booklet is issued to you by the invigilator after the **2nd Bell i.e., after 10.30 a.m.**
3. The Serial Number of this question booklet should be entered on the OMR answer sheet.
4. The Version Code of this question booklet should be entered on the OMR answer sheet and the respective circles should also be shaded completely.
5. Compulsorily sign at the bottom portion of the OMR answer sheet in the space provided.

DON'TS :

1. **THE TIMING AND MARKS PRINTED ON THE OMR ANSWER SHEET SHOULD NOT BE DAMAGED / MUTILATED / SPOILED.**
2. The **3rd Bell rings at 10.40 a.m., till then;**
   - Do not remove the paper seal present on the right hand side of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

SEAL

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. This question booklet contains 60 questions and each question will have one statement and four distracters. (Four different options / choices.)
2. After the **3rd Bell is rung at 10.40 a.m.,** remove the paper seal on the right hand side of this question booklet and check that this booklet does not have any unprinted or torn or missing pages or items etc., if so, get it replaced by a complete test booklet. Read each item and start answering on the OMR answer sheet.
3. During the subsequent 70 minutes:
   - Read each question carefully.
   - Choose the correct answer from out of the four available distracters (options / choices) given under each question / statement.
   - **Completely darken / shade the relevant circle with a BLUE OR BLACK INK BALL POINT PEN against the question number on the OMR answer sheet.**

Correct Method of shading the circle on the OMR answer sheet is as shown below :

4. Please note that even a minute unintended ink dot on the OMR answer sheet will also be recognised and recorded by the scanner. Therefore, avoid multiple markings of any kind on the OMR answer sheet.
5. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
6. After the **last bell is rung at 11.50 a.m.,** stop writing on the OMR answer sheet and affix your LEFT HAND THUMB IMPRESSION on the OMR answer sheet as per the instructions.
7. Hand over the **OMR ANSWER SHEET** to the room invigilator as it is.
8. After separating the top sheet (Our Copy), the invigilator will return the bottom sheet replica (Candidate's copy) to you to carry home for self-evaluation.
9. Preserve the replica of the OMR answer sheet for a minimum period of ONE year.

1. Which one of the following is NOT correct ?

(1) Dimensional formula of thermal conductivity (K) is $M^1L^1T^{-3}K^{-1}$

(2) Dimensional formula of potential (V) is $M^1L^2T^3A^{-1}$

(3) Dimensional formula of permeability of free space (μ_0) is $M^1L^1T^{-2}A^{-2}$

(4) Dimensional formula of RC is $M^0L^0T^{-1}$

2. In a lift moving up with an acceleration of 5 ms^{-2}, a ball is dropped from a height of 1.25 m. The time taken by the ball to reach the floor of the lift is ..... (nearly) ($g = 10\ ms^{-2}$)

(1) 0.3 second (2) 0.2 second

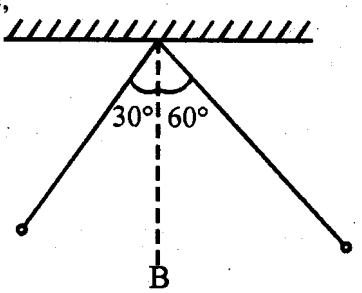
(3) 0.16 second (4) 0.4 second

3. A gun fires a small bullet with kinetic energy K. Then kinetic energy of the gun while recoiling is

(1) K (2) more than K

(3) less than K (4) $\sqrt{K}$

4. From a fixed support, two small identical spheres are suspended by means of strings of length 1 m each. They are pulled aside as shown and then released. B is the mean position. Then the two spheres collide,



(1) at B after 0.25 second

(2) at B after 0.5 second

(3) on the right side of B after some time

(4) on the right side of B when the strings are inclined at 15° with B

Space For Rough Work

5. A truck accelerates from speed v to 2v. Work done in during this is

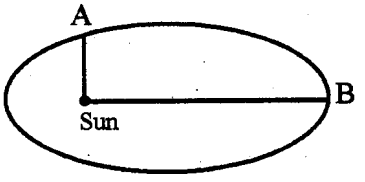
(1) three times as the work done in accelerating it from rest to v.

(2) same as the work done in accelerating it from rest to v.

(3) four times as the work done in accelerating it from rest to v.

(4) less than the work done in accelerating it from rest to v.

6. Earth is moving around the Sun in elliptical orbit as shown. The ratio of OB and OA is R. Then the ratio of Earth at A and B is



(1) R^{-1} (2) $\sqrt{R}$

(3) R (4) $R^{2/3}$

7. A projectile is projected at 10 ms^{-1} by making at an angle 60° to the horizontal. After some time its velocity makes an angle of 30° to the horizontal. Its speed at this instant is

(1) $\frac{10}{\sqrt{3}}$ (2) $10\sqrt{3}$

(3) $\frac{5}{\sqrt{3}}$ (4) $5\sqrt{3}$

8. For which combination of working temperatures of source and sink, the efficiency of Carnot's heat engine is maximum ?

(1) 600 K, 400 K (2) 400 K, 200 K

(3) 500 K, 300 K (4) 300 K, 100 K

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9. A solid cylinder of radius R made of a material of thermal conductivity K_1 is surrounded by a cylindrical shell of inner radius R and outer radius 2R made of a material of thermal conductivity K_2. The two ends of the combined system are maintained at two different temperatures. Then there is no loss of heat across the cylindrical surface and the system is in steady state. The effective thermal conductivity of the system is

(1) $K_1 + K_2$ (2) $\frac{K_1K_2}{K_1 + K_2}$

(3) $\frac{3K_1 + K_2}{4}$ (4) $\frac{K_1 + 3K_2}{4}$

10. Two stars A and B radiate maximum energy at the wavelengths of 360 nm and 480 nm respectively. Then the ratio of the surface temperatures of A and B is

(1) 3 : 4 (2) 81 : 256

(3) 4 : 3 (4) 256 : 81

11. Two solids P and Q float in water. It is observed that P floats with half of its volume immersed and Q floats with $\frac{2}{3}^{rd}$ of its volume is immersed. The ratio of densities of P and Q is

(1) 4/3 (2) 3/4

(3) 2/3 (4) 3/2

12. The equation of a transverse wave is given by $y = 0.05 \sin \pi(2t - 0.02x)$, where x, y are in metre and t is in second. The minimum distance of separation between two particles which are in phase and the wave velocity are respectively _____

(1) 50 m, 50 ms^{-1} (2) 100 m, 100 ms^{-1}

(3) 50 m, 100 ms^{-1} (4) 100 m, 50 ms^{-1}

13. The frequency of the second overtone of the open pipe is equal to the frequency of the first overtone of the closed pipe. The ratio of the lengths of the open pipe and the closed pipe is

(1) 2 : 1 (2) 1 : 2

(3) 1 : 3 (4) 3 : 1

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14. A person with vibrating tuning fork of frequency 338 Hz is moving towards a vertical wall with a speed of 2 ms^{-1}. Velocity of sound in air is 340 ms^{-1}. The number of beats heard by that person per second is

(1) 2 (2) 4

(3) 6 (4) 8

15. Pick out the WRONG statement from the following :

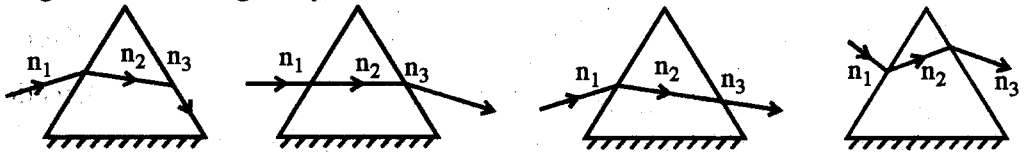
(1) Lateral shift increases as the angle of incidence increases.

(2) Lateral shift increases as the value of refractive index increases.

(3) Normal shift decreases as the value of refractive index increases.

(4) Both normal shift and lateral shift are directly proportional to the thickness of the medium.

16. The refraction through the prisms are as shown. Pick out the WRONG statement from the following. Path of the light ray in



(a) (b) (c) (d)

(1) a is correct if $n_2 > n_1$ and $n_2 > n_3$

(2) b is correct if $n_1 = n_2$ and $n_2 > n_3$

(3) c is correct if $n_2 < n_1$ and $n_2 = n_3$

(4) d is correct if $n_1 > n_2$ and $n_2 < n_3$

17. The distance between an object and its real image produced by a converging lens is 0.72 m. The magnification is 2. What will be the magnification when the object is moved by 0.04 m towards the lens ?

(1) 2 (2) 4

(3) 3 (4) 6

Space For Rough Work

18. The speed of light in media M_1 and M_2 are 1.5×10^8 ms^{-1} and 2×10^8 ms^{-1} respectively. A ray travels from medium M_1 to the medium M_2 with an angle of incidence θ. The ray suffers total internal reflection. Then the value of the angle of incidence θ is

(1) $> \sin^{-1}\left(\frac{3}{4}\right)$ (2) $< \sin^{-1}\left(\frac{3}{4}\right)$

(3) $= \sin^{-1}\left(\frac{4}{3}\right)$ (4) $\leq \sin^{-1}\left(\frac{3}{4}\right)$

19. Which of the following phenomena support the wave theory of light ?

(a) scattering
(b) interference
(c) diffraction
(d) velocity of light in a denser medium is less than the velocity of light in the rarer medium

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

20. White light reflected from a soap film (Refractive Index = 1.5) has a maxima at 600 nm and a minima at 450 nm with no minimum in between. Then the thickness of the film is _____ $\times 10^{-7}$ m.

(1) 1 (2) 2
(3) 3 (4) 4

21. A cylindrical tube of length 0.2 m and radius R with sugar solution of concentration 'C' produce a rotation of θ in the plane of vibration of a plane polarized light. The same sugar solution is transferred to another tube of length 0.3 m of same radius. The remaining gap is filled by distilled water. Now the optical rotation produced is

(1) θ (2) $2\frac{\theta}{3}$

(3) $3\frac{\theta}{2}$ (4) $9\frac{\theta}{4}$

Space For Rough Work

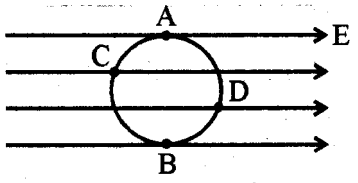
22. Radii of curvature of a converging lens are in the ratio 1 : 2. Its focal length is 6 cm and refractive index is 1.5. Then its radii of curvature are _____ respectively.

(1) 9 cm and 18 cm
(2) 6 cm and 12 cm
(3) 3 cm and 6 cm
(4) 4.5 cm and 9 cm

23. A small oil drop of mass 10^{-6} kg is hanging in at rest between two plates separated by 1 mm having a potential difference of 500 V. The charge on the drop is _____ ($g = 10\ ms^{-2}$)

(1) 2×10^{-9} C
(2) 2×10^{-11} C
(3) 2×10^{-6} C
(4) 2×10^{-8} C

24. A uniform electric field in the plane of the paper as shown. Here A, B, C, D are the points on the circle. V_1, V_2, V_3, V_4 are the potentials at those points respectively. Then



(1) $V_A = V_C, V_B = V_D$
(2) $V_A = V_C, V_B > V_D$
(3) $V_A > V_C, V_B > V_D$
(4) $V_A = V_B, V_C = V_D$

25. Two metal spheres of radii 0.01 m and 0.02 m are given a charge of 15 mC and 45 mC respectively. They are then connected by a wire. The final charge on the first sphere is _____ $\times 10^{-3}$ C.

(1) 40
(2) 30
(3) 20
(4) 10

26. Two concentric spheres of radii R and r have positive charges q_1 and q_2 with equal surface charge densities. What is the electric potential at their common centre ?

(1) $\frac{\sigma}{\epsilon_0}(R + r)$
(2) $\frac{\sigma}{\epsilon_0}(R - r)$
(3) $\frac{\sigma}{\epsilon_0}\left(\frac{1}{R} + \frac{1}{r}\right)$
(4) $\frac{\sigma}{\epsilon_0}\left(\frac{R}{r}\right)$

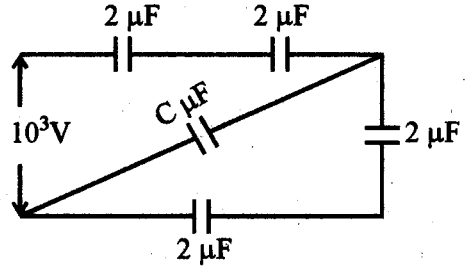
Space For Rough Work

27. When an additional charge of 2C is given to a capacitor, energy stored in it is increased by 21%. The original charge of the capacitor is

(1) 30 C (2) 40 C

(3) 10 C (4) 20 C

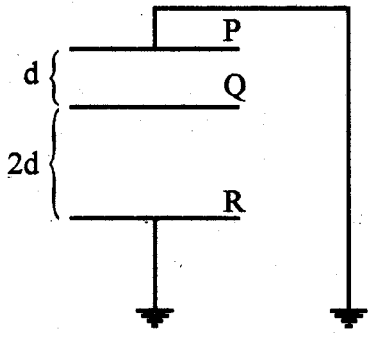
28. When a potential difference of 10^3 V is applied between A and B, a charge of 0.75 mC is stored in the system of capacitors as shown. The value of C is (in μF)



(1) ½ (2) 2

(3) 2.5 (4) 3

29. See the diagram. Area of each plate is 2.0 m^2 and $d = 2 \times 10^{-3}$ m. A charge of 8.85×10^{-8} C is given to Q. Then the potential of Q becomes



(1) 13 V (2) 10 V

(3) 6.67 V (4) 8.825 V

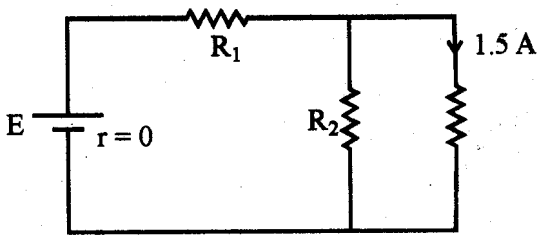
Space For Rough Work

30. Three conductors draw currents of 1 A, 2 A and 3 A respectively, when connected in turn across a battery. If they are connected in series and the combination is connected across the same battery, the current drawn will be

(1) $\frac{2}{7}$ A (2) $\frac{3}{7}$ A

(3) $\frac{4}{7}$ A (4) $\frac{5}{7}$ A

31. In the circuit, $R_1 = R_2$. The value of E and R_1 are _____ (E – EMF, R_1 – resistance)



(1) 180 V, 60 Ω (2) 120 V, 60 Ω

(3) 180 V, 10 Ω (4) 120 V, 10 Ω

32. Masses of three wires of copper are in the ratio of 1 : 3 : 5 and their lengths are in the ratio of 5 : 3 : 1. The ratio of their electrical resistances is

(1) 1 : 3 : 5 (2) 5 : 3 : 1

(3) 1 : 15 : 125 (4) 125 : 15 : 1

33. For a transformer, the turns ratio is 3 and its efficiency is 0.75. The current flowing in the primary coil is 2 A and the voltage applied to it is 100 V. Then the voltage and the current flowing in the secondary coil are _____ respectively.

(1) 150 V, 1.5 A (2) 300 V, 0.5 A

(3) 300 V, 1.5 A (4) 150 V, 0.5 A

Space For Rough Work

34. A proton and helium nucleus are shot into a magnetic field at right angles to the field with same kinetic energy. Then the ratio of their radii is

(1) 1 : 1 (2) 1 : 2

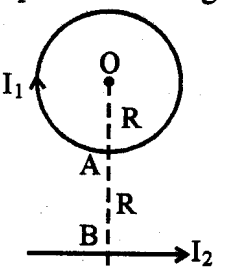
(3) 2 : 1 (4) 1 : 4

35. Two identical circular coils A and B are kept on a horizontal tube side by side without touching each other. If the current in the coil A increases with time, in response, the coil B

(1) is attracted by A (2) remains stationary

(3) is repelled (4) rotates

36. In the diagram, I_1, I_2 are the strength of the currents in the loop and straight conductors respectively. OA = AB = R. The net magnetic field at the centre O is zero. Then the ratio of the currents in the loop and the straight conductors is



(1) π (2) 2π

(3) $\frac{1}{\pi}$ (4) $\frac{1}{2\pi}$

37. Two tangent galvanometers, which are identical except in their number of turns, are connected in parallel. The ratio of their resistances of the coils is 1 : 3. If the deflections in the two tangent galvanometers are 30° and 60° respectively, then the ratio of their number of turns is

(1) 1 : 1 (2) 3 : 1

(3) 1 : 2 (4) 1 : 6

Space For Rough Work

38. A charged particle with a velocity 2×10^3 ms^{-1} passes undeflected through electric field and magnetic fields in mutually perpendicular directions. The magnetic field is 1.5 T. The magnitude of electric field will be

(1) 1.5×10^3 NC^{-1} (2) 2×10^3 NC^{-1}

(3) 3×10^3 NC^{-1} (4) 1.33×10^3 NC^{-1}

39. In R-L-C series circuit, the potential differences across each element is 20 V. Now the value of the resistance alone is doubled, then P.D. across R, L and C respectively

(1) 20 V, 10 V, 10 V (2) 20 V, 20 V, 20 V

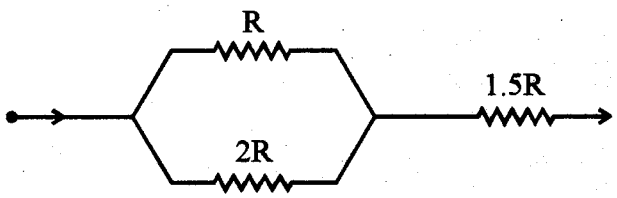
(3) 20 V, 40 V, 40 V (4) 10 V, 20 V, 20 V

40. A rectangular coil of 100 turns and size 0.1 m × 0.05 m is placed perpendicular to a magnetic field of 0.1 T. If the field drops to 0.05 T in 0.05 second, the magnitude of the e.m.f. induced in the coil is

(1) $\sqrt{2}$ (2) $\sqrt{3}$

(3) $\sqrt{0.6}$ (4) $\sqrt{6}$

41. In the circuit diagram, heat produces in R, 2R and 1.5R are in the ratio of



(1) 4 : 2 : 3 (2) 8 : 4 : 27

(3) 2 : 4 : 3 (4) 27 : 8 : 4

Space For Rough Work

42. A series combination of resistor (R), capacitor (C) is connected to an A.C. source of angular frequency 'ω'. Keeping the voltage same, if the frequency is changed to $\omega/3$, the current becomes half of the original current. Then the ratio of the capacitive reactance and resistance at the former frequency is

(1) $\sqrt{0.6}$ (2) $\sqrt{3}$

(3) $\sqrt{2}$ (4) $\sqrt{6}$

43. Pick out the correct statement from the following :

(1) Mercury vapour lamp produces line emission spectrum.

(2) Oil flame produces line emission spectrum.

(3) Band spectrum helps us to study molecular structure.

(4) Sunlight spectrum is an example for line absorption spectrum.

44. Light emitted during the deexcitation of electron from n = 3 to n = 2, when incident on a metal, photoelectrons are just emitted from that metal. In which of the following deexcitations photoelectric effect is not possible ?

(1) From n = 2 to n = 1 (2) From n = 3 to n = 1

(3) From n = 5 to n = 2 (4) From n = 4 to n = 3

45. The additional energy that should be given to an electron to reduce its de-Broglie wavelength from 1 nm to 0.5 nm is

(1) 2 times the initial kinetic energy

(2) 3 times the initial kinetic energy

(3) 0.5 times the initial kinetic energy

(4) 4 times the initial kinetic energy

46. The ionisation energy of an electron in the ground state of helium atom is 24.6 eV. The energy required to remove both the electron is

(1) 51.8 eV (2) 79 eV

(3) 38.2 eV (4) 49.2 eV

Space For Rough Work

47. ——————————3E
——————————5E/3
——————————E

The figure shows the energy level of certain atom. When the electron deexcites from 3E to E, an electromagnetic wave of wavelength λ is emitted. What is the wavelength of the electromagnetic wave emitted when the electron deexcites from $\frac{5E}{3}$ to E ?

(1) 3λ (2) 2λ

(3) 5λ (4) $\frac{3\lambda}{5}$

48. Maximum velocity of the photoelectron emitted by a metal is 1.8×10^6 ms^{-1}. Take the value of specific charge of the electron is 1.8×10^{11} C kg^{-1}. Then the stopping potential in volt is

(1) 1 (2) 3

(3) 9 (4) 6

49. λ_1 and λ_2 are used to illuminate the slits. β_1 and β_2 are the corresponding fringe widths. The wavelength λ_1 can produce photoelectric effect when incident on a metal. But the wavelength λ_2 cannot produce photoelectric effect. The correct relation between β_1 and β_2 is

(1) $\beta_1 < \beta_2$ (2) $\beta_1 = \beta_2$

(3) $\beta_1 > \beta_2$ (4) $\beta_1 \geq \beta_2$

50. Pick out the correct statement/s from the following :

(a) Electron emission during β-decay is always accompanied by neutrino.

(b) Nuclear force is charge independent.

(c) Fusion is the chief source of stellar energy.

(1) (a), (b) are correct. (2) (a), (c) are correct.

(3) only (a) is correct. (4) (b), (c) are correct.

Space For Rough Work

51. A nucleus ${}_{Z}X^{A}$ emits an α-particle with velocity v. The recoil speed of the daughter nucleus is

(1) $\frac{A-4}{4v}$ (2) $\frac{4v}{A-4}$

(3) v (4) $\frac{v}{4}$

52. A radioactive substance emits 100 beta particles in the first 2 seconds and 50 beta particles in the next 2 seconds. The mean life of the sample is

(1) 4 seconds (2) 2 seconds

(3) $\frac{2}{0.693}$ seconds (4) 2×0.693 seconds

53. In which of the following statements, the obtained impure semiconductor is of p-type ?

(1) Germanium is doped with bismuth (2) Silicon is doped with antimony

(3) Germanium is doped with gallium (4) Silicon is doped with phosphorus

54. The width of the depletion region in a P-N junction diode is

(1) increased by reverse bias (2) increased by forward bias

(3) decreased by reverse bias (4) independent of the bias voltage

55. When the transistor is used as an amplifier

(1) Emitter-base junction must be reverse biased, Collector-base junction must be forward biased.

(2) Emitter-base junction must be forward biased, Collector-base junction must be forward biased.

(3) Emitter-base junction must be reverse biased, Collector-base junction must be reverse biased.

(4) Emitter-base junction must be forward biased, Collector-base junction must be reverse biased.

Space For Rough Work

56. Which of the following is not made by quarks ?

(1) Neutron (2) Positron

(3) Proton (4) π-meson

57. Which one of the following is NOT correct ?

(1) In forward biased condition diode conducts.

(2) If the packing fraction is negative, the element is stable.

(3) Binding energy is the energy equivalent to mass defect.

(4) Radioactive element can undergo spontaneous fission.

58. The output of an OR gate is connected to both the inputs of a NAND gate. The combination will serve as

(1) AND gate (2) NOT gate

(3) NAND gate (4) NOR gate

59. A and B are the two radioactive elements. The mixture of these elements show a total activity of 1200 disintegrations/minute. The half life of A is 1 day and that of B is 2 days. What will be the total activity after 4 days ? Given : The initial number of atoms in A and B are equal.

(1) 200 dis/min (2) 250 dis/min

(3) 500 dis/min (4) 150 dis/min

60. The binding energy/nucleon of deuteron ($_1H^2$) and the helium atom ($_2He^4$) are 1.1 MeV and 7 MeV respectively. If the two deuteron atoms fuse to form a single helium atom, then the energy released is

(1) 26.9 MeV (2) 25.8 MeV

(3) 23.6 MeV (4) 12.9 MeV

Space For Rough Work

SEAL

A-1

SUBJECT : CHEMISTRY	DAY–2
SESSION : AFTERNOON	TIME : 02.30 P.M. TO 03.50 P.M.

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7. Hand over the **OMR ANSWER SHEET** to the room invigilator as it is.
8. After separating the top sheet (Our Copy), the invigilator will return the bottom sheet replica (Candidate's copy) to you to carry home for self-evaluation.
9. Preserve the replica of the OMR answer sheet for a minimum period of ONE year.

1. The process of zone refining is used in the purification of

(1) Al (2) Ge

(3) Cu (4) Ag

2. The number of water molecules present in a drop of water weighing 0.018 gm is

(1) 6.022×10^{26} (2) 6.022×10^{23}

(3) 6.022×10^{19} (4) 6.022×10^{20}

3. Empirical formula of a compound is CH_2O and its molecular mass is 90, the molecular formula of the compound is

(1) $C_3H_6O_3$ (2) $C_2H_4O_2$

(3) $C_6H_{12}O_6$ (4) CH_2O

4. Hybridised states of carbon in Graphite and Diamond are respectively

(1) sp^3, sp^3 (2) sp^3, sp^2

(3) sp^2, sp^2 (4) sp^2, sp^3

5. The mass of 112 cm^3 of NH_3 gas at STP is

(1) 0.085 g (2) 0.850 g

(3) 8.500 g (4) 80.500 g

Space For Rough Work

6. IUPAC name of $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_2 - \underset{\underset{COOH}{|}}{CH} - CH_3$ is

(1) 4-hydroxy 1 methyl pentanoic acid

(2) 4-hydroxy 2 methyl pentanoic acid

(3) 2-hydroxy 4 methyl pentanoic acid

(4) 2-hydroxy 2 methyl pentanoic acid

7. Alkali metals have negative reduction potential and hence they behave as

(1) Oxidising agents (2) Lewis bases

(3) Reducing agents (4) Electrolytes

8. Which of the following gases has the highest value of RMS-velocity at 298 K ?

(1) CH_4 (2) CO

(3) Cl_2 (4) CO_2

9. Cycloalkane formed when 1, 4-dibromopentane is heated with Sodium is

(1) Methyl cyclobutane (2) Cyclopentane

(3) Cyclobutane (4) Methyl cyclopentane

Space For Rough Work

10. In the reaction, $2FeSO_4 + H_2SO_4 + H_2O_2 \rightarrow Fe_2(SO_4)_3 + 2H_2O$, the oxidizing agent is

(1) $FeSO_4$ (2) H_2SO_4

(3) H_2O_2 (4) Both H_2SO_4 and H_2O_2

11. Given Thermochemical equation, $2H_{2(g)} + O_{2(g)} \rightarrow 2H_2O_{(l)}$; $\Delta H = -571.6$ kJ. Heat of decomposition of water is

(1) – 571.6 kJ (2) + 571.6 kJ

(3) – 1143.2 kJ (4) + 285.8 kJ

12. In Buna-S, the symbol 'Bu' stands for

(1) 1-Butene (2) n-Butene

(3) 2-Butene (4) Butadiene

13. The electronic configuration of Cu^{2+} ion is

(1) [Ar] $3d^8\ 4s^1$ (2) [Ar] $3d^9\ 4s^0$

(3) [Ar] $3d^7\ 4s^2$ (4) [Ar] $3d^8\ 4s^0$

Space For Rough Work

14. The yield of the products in the reaction, $A_{2(g)} + 2B_{(g)} \rightleftharpoons C_{(g)} + Q.$ kJ would be higher at

(1) High temperature and high pressure

(2) High temperature and low pressure

(3) Low temperature and high pressure

(4) Low temperature and low pressure

15. Mesomeric effect involves

(1) delocalisation of π -electrons

(2) delocalisation of σ-electrons

(3) partial displacement of electrons

(4) delocalisation of π and σ electrons

16. Which one of the following sets of ions represents the collection of isoelectronic species ?

(1) $K^+, Cl^-, Mg^{2+}, Sc^{3+}$

(2) $Na^+, Ca^{2+}, Sc^{3+}, F^-$

(3) $K^+, Ca^{2+}, Sc^{3+}, Cl^-$

(4) $Na^+, Mg^{2+}, Al^{3+}, Cl^-$

17. Adsorption theory is applicable for

(1) Homogeneous catalysis

(2) Heterogeneous catalysis

(3) Autocatalysis

(4) Induced catalysis

Space For Rough Work

18. Methane can be converted into Ethane by the reactions

(1) Chlorination followed by the reaction with alcoholic KOH.

(2) Chlorination followed by the reaction with aqueous KOH.

(3) Chlorination followed by Wurtz reaction.

(4) Chlorination followed by decarboxylation.

19. Intramolecular Hydrogen bonding is formed in

(1) H_2O (2) Salicylaldehyde

(3) NH_3 (4) Benzophenone

20. If 50% of the reactant is converted into a product in a first order reaction in 25 minutes, how much of it would react in 100 minutes ?

(1) 93.75% (2) 87.5%

(3) 75% (4) 100%

21. The number of optical isomers of the compound $CH_3 - CHBr - CHBr - COOH$ is

(1) 0 (2) 1

(3) 3 (4) 4

Space For Rough Work

22. When limestone is heated, CO_2 is given off. The metallurgical operation is

(1) Smelting (2) Reduction

(3) Calcination (4) Roasting

23. The rate of reaction increases with rise in temperature because of

(1) increase in number of activated molecules.

(2) increase in energy of activation.

(3) decrease in energy of activation.

(4) increase in the number of effective collisions.

24. Meso compounds do not show optical activity because

(1) they do not contain chiral carbon atoms.

(2) they have non-super imposable mirror images.

(3) they contain plane of symmetry.

(4) they do not contain plane of symmetry.

25. When formic acid is heated with concentrated H_2SO_4, the gas evolved is

(1) only CO_2 (2) only 'CO'

(3) a mixture of 'CO' and 'CO_2' (4) a mixture of 'SO_2' and 'CO_2'

Space For Rough Work

26. Temperature coefficient of a reaction is '2'. When temperature is increased from 30 °C to 90 °C, the rate of reaction is increased by

(1) 60 times (2) 64 times

(3) 150 times (4) 400 times

27. Conversion of benzene to acetophenone can be brought by

(1) Wurtz reaction (2) Wurtz-Fittig's reaction

(3) Friedel Crafts alkylation (4) Friedel Crafts acylation

28. Excess of PCl_5 reacts with concentrated H_2SO_4 giving

(1) Chlorosulphuric acid (2) Sulphurous acid

(3) Sulphuryl chloride (4) Thionyl chloride

29. An example for a neutral buffer is

(1) Ammonium hydroxide and Ammonium chloride

(2) Acetic acid and Sodium acetate

(3) Acetic acid and Ammonium hydroxide

(4) Citric acid and Sodium citrate

Space For Rough Work

30. Least energetic conformation of cyclohexane is

(1) Chain conformation (2) Boat conformation

(3) Cis conformation (4) E-z form

31. Which of the following is employed in flash tubes in photography ?

(1) Ar (2) Ne

(3) Kr (4) Xe

32. Conjugate base of $H_2PO_4^-$ is

(1) HPO_4^- (2) HPO_4^{2-}

(3) H_3PO_4 (4) PO_4^{3-}

33. An alkyl bromide (X) reacts with Sodium in ether to form 4, 5-diethyl octane, the compound 'X' is

(1) $CH_3(CH_2)_3Br$ (2) $CH_3(CH_2)_5Br$

(3) $CH_3(CH_2)_3CH(Br)CH_3$ (4) $CH_3-(CH_2)_2-CH(Br)-CH_2-CH_3$

34. Which one of the following shows highest magnetic moment ?

(1) Fe^{2+} (2) CO^{2+}

(3) Cr^{3+} (4) Ni^{2+}

Space For Rough Work

35. The emf of a galvanic cell constituted with the electrodes Zn^{2+} | Zn (– 0.76 V) and Fe^{2+}| Fe(–0.41 V) is

(1) – 0.35 V (2) + 1.17 V

(3) + 0.35 V (4) – 1.17 V

36. Which of the following pairs are correctly matched ?

	Reactants	**Products**
I.	$RX + AgOH_{(aq)}$	RH
II.	$RX + AgCN_{(alco)}$	RNC
III.	$RX + KCN_{(alco)}$	RNC
IV.	$RX + Na_{(ether)}$	R–R

(1) I alone (2) I and II

(3) II and III (4) II and IV

37. In a transition series, with the increase in atomic-number, the paramagnetism

(1) increases gradually

(2) decreases gradually

(3) first increases to a maximum and then decreases

(4) first decreases to a minimum and then increases

Space For Rough Work

38. Identify a species which is 'NOT' a Bronsted acid but a Lewis acid.

(1) BF_3 (2) H_3^+O

(3) NH_3 (4) HCl

39. The compound formed when calcium acetate and calcium formate is dry distilled.

(1) Acetone (2) Acetaldehyde

(3) Benzaldehyde (4) Acetophenone

40. d^2sp^3 hybridisation of the atomic orbitals gives

(1) Square planar structure (2) Triangular structure

(3) Tetrahedral structure (4) Octahedral structure

41. The pH of 10^{-8}M HCl solution is

(1) 8 (2) 6.9586

(3) More than 8 (4) Slightly more than 7

Space For Rough Work

42. Which of the following is strongly acidic ?

(1) Phenol (2) o-cresol

(3) p-nitrophenol (4) p-cresol

43. A group of atoms can function as a ligand only when

(1) it is a small molecule. (2) it has an unshared electron pair.

(3) it is a negatively charged ion. (4) it is a positively charged ion.

44. Which of the following is 'NOT' a colligative property ?

(1) Elevation in boiling point (2) Depression in freezing point

(3) Osmotic pressure (4) Lowering of vapour pressure

45. Acetone and Propanal are

(1) Functional isomers (2) Position isomers

(3) Geometrical isomers (4) Optical isomers

46. Which of the following is diamagnetic ?

(1) H_2^+ (2) He_2^+

(3) O_2 (4) N_2

Space For Rough Work

47. 3 gms of urea is dissolved in 45 gms of H_2O. The relative lowering in vapour pressure is

(1) 0.05
(2) 0.04
(3) 0.02
(4) 0.01

48. The reagent used to distinguish between acetaldehyde and benzaldehyde is

(1) Tollen's reagent
(2) Fehling's solution
(3) 2-4-dinitrophenyl hydrazine
(4) Semicarbazide

49. Metallic lustre is due to

(1) high density of metals
(2) high polish on the surface of metals
(3) reflection of light by mobile electrons
(4) chemical inertness of metals

50. Which of the following aqueous solutions will exhibit highest boiling point ?

(1) 0.01 M urea
(2) 0.01 M KNO_3
(3) 0.01 M Na_2SO_4
(4) 0.015 M $C_6H_{12}O_6$

Space For Rough Work

51. Which one of the following gives amine on heating with amide ?

(1) Br_2 in aqueous KOH
(2) Br_2 in alcoholic KOH
(3) Cl_2 in Sodium
(4) Sodium in Ether

52. The number of antibonding electrons present in O_2^- molecular ion is

(1) 8
(2) 6
(3) 5
(4) 4

53. The process is spontaneous at the given temperature, if

(1) ΔH is +ve and ΔS is –ve
(2) ΔH is –ve and ΔS is +ve
(3) ΔH is +ve and ΔS is +ve
(4) ΔH is +ve and ΔS is equal to zero

54. Glucose when reduced with HI and Red Phosphorus gives

(1) n-hexane
(2) n-heptane
(3) n-pentane
(4) n-octane

55. The stability of a Lyophobic colloid is due to

(1) Adsorption of covalent molecules on the colloid
(2) The size of the particles
(3) The charge on the particles
(4) Tyndall effect

Space For Rough Work

56. Oils are liquids at room temperature since they contain higher percentage of

(1) Oleates
(2) Palmitates
(3) Stearates
(4) Myristates

57. Which of the following cations will have minimum flocculation value for arsenic sulphide sol ?

(1) Na^+
(2) Mg^{2+}
(3) Ca^{2+}
(4) Al^{3+}

58. The value of entropy of solar system is

(1) increasing
(2) decreasing
(3) constant
(4) zero

59. In face centred cubic lattice, a unit cell is shared equally by how many unit cells ?

(1) 6
(2) 4
(3) 2
(4) 8

60. The number of disulphide linkages present in Insulin are

(1) 4
(2) 3
(3) 2
(4) 1

Space For Rough Work

A-1

SUBJECT : BIOLOGY	DAY–1
SESSION : MORNING	TIME : 10.30 A.M. TO 11.50 A.M.

MAXIMUM MARKS	TOTAL DURATION	MAXIMUM TIME FOR ANSWERING
60	80 MINUTES	70 MINUTES

MENTION YOUR CET NUMBER	QUESTION BOOKLET DETAILS	
	VERSION CODE	SERIAL NUMBER
	A - 1	148977

DOs :

1. Check whether the CET No. has been entered and shaded in the respective circles on the OMR answer sheet.
2. This Question Booklet is issued to you by the invigilator after the **2nd Bell i.e., after 10.30 a.m.**
3. The Serial Number of this question booklet should be entered on the OMR answer sheet.
4. The Version Code of this question booklet should be entered on the OMR answer sheet and the respective circles should also be shaded completely.
5. Compulsorily sign at the bottom portion of the OMR answer sheet in the space provided.

DON'TS :

1. **THE TIMING AND MARKS PRINTED ON THE OMR ANSWER SHEET SHOULD NOT BE DAMAGED / MUTILATED / SPOILED.**
2. The **3rd Bell rings at 10.40 a.m., till then;**
   - Do not remove the paper seal present on the right hand side of this question booklet.
   - Do not look inside this question booklet.
   - Do not start answering on the OMR answer sheet.

IMPORTANT INSTRUCTIONS TO CANDIDATES

1. This question booklet contains 60 questions and each question will have one statement and four distracters. (Four different options / choices.)
2. After the **3rd Bell is rung at 10.40 a.m.,** remove the paper seal on the right hand side of this question booklet and check that this booklet does not have any unprinted or torn or missing pages or items etc., if so, get it replaced by a complete test booklet. Read each item and start answering on the OMR answer sheet.
3. During the subsequent 70 minutes:
   - Read each question carefully.
   - Choose the correct answer from out of the four available distracters (options / choices) given under each question / statement.
   - **Completely darken / shade the relevant circle with a BLUE OR BLACK INK BALL POINT PEN against the question number on the OMR answer sheet.**

Correct Method of shading the circle on the OMR answer sheet is as shown below :

4. Please note that even a minute unintended ink dot on the OMR answer sheet will also be recognised and recorded by the scanner. Therefore, avoid multiple markings of any kind on the OMR answer sheet.
5. Use the space provided on each page of the question booklet for Rough Work. Do not use the OMR answer sheet for the same.
6. After the **last bell is rung at 11.50 a.m.,** stop writing on the OMR answer sheet and affix your LEFT HAND THUMB IMPRESSION on the OMR answer sheet as per the instructions.
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8. After separating the top sheet (Our Copy), the invigilator will return the bottom sheet replica (Candidate's copy) to you to carry home for self-evaluation.
9. Preserve the replica of the OMR answer sheet for a minimum period of ONE year.

1. The most unstable RNA is

(1) Messenger RNA (2) Soluble RNA

(3) Ribosomal RNA (4) Heterogeneous nuclear RNA

2. Choose the right one which denotes genetic diversity.

(1) Chromosomes – nucleotides – genes – individuals – populations

(2) Populations – individuals – chromosomes – nucleotides – genes

(3) Genes – nucleotides – chromosomes – individuals – populations

(4) Nucleotides – genes – chromosomes – individuals – populations

3. The portion of an Eukaryotic gene which is transcribed but not translated is

(1) Exon (2) Intron

(3) Cistron (4) Codon

4. The appearance of chancre, rashes all over the body are the symptoms of

(1) Gonorrhoea (2) Aids

(3) Syphilis (4) Fever

5. Read the statements (A) and (B). Choose the right one.

(A) Synthesis of mRNA takes place in 5' – 3' direction.

(B) Reading of mRNA is always in 3' – 5' direction.

(1) Both the statements are wrong.

(2) Statement (A) is wrong, (B) is correct.

(3) Statement (B) is wrong, (A) is correct.

(4) Both the statements (A) and (B) are correct.

Space For Rough Work

6. Assimilatory power is

(1) $NADPH_2$ (2) ATP

(3) ATP and $NADPH_2$ (4) $FADH_2$

7. ECORI cleaves the DNA strands to produce

(1) Blunt ends (2) Sticky ends

(3) Satellite ends (4) Ori replication end

8. Read the statements (A) and (B) and identify the correct choice from those given :

Statement (A) : Women are at the peak of conception on the 14^{th} day of ovulation.

Statement (B) : Vasectomy is the method normally employed to avoid conception in females.

(1) Statement (A) is wrong, (B) is right.

(2) Statement (A) is right, (B) is wrong.

(3) Both the statements are right.

(4) Both the statements are wrong.

9. The sequence of nitrogenous bases in one strand of DNA are 3' TAC GCG ACG 5'. The complementary DNA strand should have

(1) 5' AUG CGC TGC 3' (2) 3' ATG CGC TGC 5'

(3) 5' UAC GCG ACG 3' (4) 5' ATG CGC TGC 3'

10. Which one of the following statement is correct regarding spinal cord ?

(1) It is composed of outer grey matter and inner white matter.

(2) It is composed of outer white matter and inner grey matter.

(3) It is composed of outer grey matter and inner colourless matter.

(4) It is composed of grey matter only.

Space For Rough Work

11. Match the entries in Column I with those of Column II and choose the correct answer.

Column – I	Column – II
(A) Restriction endonucleases	(P) Kohler and Milstein
(B) Polymerase chain reaction	(Q) Alec Jeffreys
(C) DNA fingerprinting	(R) Arber
(D) Monoclonal antibodies	(S) Karry Mullis

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

12. Which taxonomic term may be suggested for any rank in the classification ?

(1) Class
(2) Order
(3) Species
(4) Taxon

13. In one of the techniques of recombinant insulin production the genes for α and β polypeptides were inserted into the plasmid by the side of

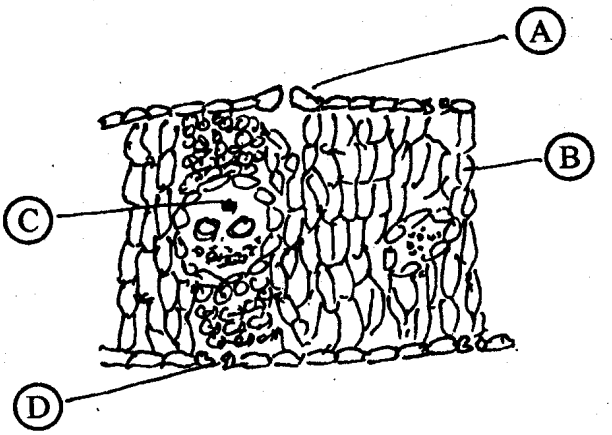
(1) Antibiotic resistance gene
(2) Lac z promoter gene
(3) β galactosidase gene
(4) Ori

14. Which one does not belong to monera ?

(1) Slime moulds
(2) Mycoplasma
(3) Eubacteria
(4) Archaebacteria

Space For Rough Work

15. The diagram given below represents the T.S. of dicot leaf. Identify the parts labelled as A, B, C and D, which denote their functions and choose the correct one given below :



(1) A : Motor action B : Photosynthesis
C : Conduction D : Transpiration

(2) A : Motor action B : Conduction
C : Photosynthesis D : Transpiration

(3) A : Transpiration B : Photosynthesis
C : Conduction D : Transpiration

(4) A : Transpiration B : Conduction
C : Photosynthesis D : Motor action

16. Which of the following tissue is not a component of a complex tissues ?

(1) Parenchyma (2) Collenchyma
(3) Sclerenchyma (4) Tracheids

17. Mosses and ferns are

(1) Thallophytes of plant kingdom
(2) Angiosperms of plant kingdom
(3) Gymnosperms of plant kingdom
(4) Amphibians of plant kingdom

Space For Rough Work

18. Plasmodermata is usually observed between

(1) Sieve tubes and Bast fibre

(2) Trachea and Phloem fibres

(3) Xylem parenchyma and xylem fibres

(4) Sieve tubes and companion cells

19. The embryo sac of an angiosperm is made up of

(1) 8 cells

(2) 7 cells and 8 nuclei

(3) 8 nuclei

(4) 8 cells and 7 nuclei

20. Cork Cambium of dicot stem originates from

(1) Dedifferentiated parenchyma cells of cortex

(2) Dedifferentiated collenchyma cells of cortex

(3) Parenchyma cells of medullary ray

(4) Parenchyma cells of pericycle

21. Match the words of Column I with that of Column II and choose the correct answer given below :

Column – I		**Column – II**
(A)	Algae	(P) Gymnosperms
(B)	Riccia	(Q) Pond scum
(C)	Spirogyra	(R) Autotrophic
(D)	Gnetum	(S) Liverwort

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

Space For Rough Work

22. The opening and closing of stomata are controlled by the activity of

(1) Guard cells (2) Epidermal cells

(3) Mesophyll cells (4) Lenticels

23. In which of these following phyla given as the adult shows radial symmetry, the larva shows bilateral symmetry ?

(1) Annelids (2) Arthropods

(3) Molluscs (4) Echinodermata

24. A thin film of water covering the soil particles and held strongly by attractive forces is called

(1) Run away (2) Hygroscopic

(3) Gravitational (4) Capillary

25. Which one of the following groups of 3 animals each is correctly matched with their one characteristic morphological features ?

	Animals		**Morphological features**
(1)	Centipede, Prawn, Sea urchin	–	Jointed appendages
(2)	Cockroach, Locust, Taenia	–	Metameric segmentation
(3)	Scorpion, Spider, Cockroach	–	Ventral solid nerve cord
(4)	Liverfluke, Sea anemone, Sea cucumber	–	Bilateral symmetry

26. Consider the following statements and select the correct one :

Statement (A) : Pure water has maximum water potential.

Statement (B) : The osmotic potential is zero in pure water.

(1) Both statements are correct and (B) is not the reason for (A).

(2) Both statements are wrong.

(3) Both statements are correct and (B) is the reason for (A).

(4) Both statements are correct.

Space For Rough Work

27. A bivalent of meiosis I consists of

(1) Four chromatids and two centromeres

(2) Two chromatids and one centromere

(3) Two chromatids and two centromeres

(4) Four chromatids and four centromeres

28. Electrons from excited chlorophyll molecules of photosystem II are accepted first by

(1) Ferredoxin (2) Pheophytin

(3) Cytochrome b (4) Cytochrome f

29. Match the following list of animals with their level of organization and choose the correct sequence :

	Column – I		**Column – II**
(A)	Organ level	(P)	Pheritima
(B)	Cellular aggregate level	(Q)	Fasciola
(C)	Tissue level	(R)	Spongilla
(D)	Organ system level	(S)	Obelia

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

30. Oxidative decarboxylation occurs during the formation of

(1) Citric acid and Succinic acid

(2) Citric acid and Oxaloacetic acid

(3) Acetyl CoA and Succinyl CoA

(4) Oxaloacetic acid and Oxalosuccinic acid

Space For Rough Work

31. The edible part of the fruit of apple is

(1) Endocarp
(2) Thalamus
(3) Pericarp
(4) Perianth

32. Given below is an electron acceptor. Mention its status, which is labelled as (A)

$Cyt^{++} \xrightarrow{2e} Cyt^{+++}$ (A)

(1) Oxidised
(2) Reduced
(3) Phosphorylation
(4) Hydrated

33. The Floral formula $\female K_5 \overset{\frown}{C_{(5)}} A_5 G_2$ is that of

(1) Hibiscus
(2) Banana
(3) Tulip
(4) Vinca

34. Interferons are the protein molecules produced from the

(1) Normal cells
(2) Infected host cells
(3) Macrophages
(4) B. Lymphocytes

35. Tikka is a

(1) Fungal disease
(2) Viral disease
(3) Bacterial disease
(4) Protozoan disease

36. Which of the statement is correct ?

(1) Each back cross is a test cross.
(2) Each test cross is a back cross.
(3) Crossing F_2 with F_1 is a test cross.
(4) Crossing F_2 with P_1 is called a test cross.

Space For Rough Work

37. Amrithmahal is a/an

(1) Dual purpose breed
(2) Exotic breed
(3) Cross breed
(4) Drought breed

38. Gynecomastica is the symptom of

(1) Klinefelter's syndrome
(2) Down's syndrome
(3) Turner's syndrome
(4) Cri-du-chat syndrome

39. The branch of biology that deals with study of fossil animals is known as

(1) Para biology
(2) Phylogeny
(3) Paleontology
(4) Para zoology

40. A colourblind man marries the daughter of another colourblind man whose wife had a normal genotype for colour vision. In their progeny

(1) All the children would colourblind.
(2) All their sons are colourblind.
(3) None of the daughters would be colourblind.
(4) Half of their sons and half of their daughters would be colourblind.

41. The plants which have antidiabetic properties

(1) Ocimum sanctum
(2) Gymnema sylvestre
(3) Adathoda vasica
(4) Phyllantus emblica

42. Deforestation means

(1) growing plants and trees in an area where there is no forest.
(2) growing plants and trees in an area where the forest is removed.
(3) growing plants and trees in a pond.
(4) removal of plants and trees.

Space For Rough Work

43. Lysosomes are produced by

(1) Golgi complex (2) Mitochondria

(3) Endoplasmic reticulum (4) Leucoplasts

44. Kokkarebellur Bird Sanctuary is noticed in

(1) Mandya (2) Mysore

(3) Chamarajnagar (4) Hassan

45. One of the following is also called Sewall Wright effect.

(1) Isolation (2) Gene pool

(3) Genetic drift (4) Gene flow

46. Oran is a

(1) Sacred groove (2) Sacred landscape

(3) Sacred animal (4) Endangered animal

47. Put the following parts of a reflex arc in the correct order beginning with the sensory receptor :

(A) Motor neuron

(B) Interneuron

(C) Effector

(D) Sensory neuron

(E) Sensory receptor

(1) (E) (D) (B) (A) (C)

(2) (E) (D) (A) (B) (C)

(3) (A) (B) (C) (D) (E)

(4) (A) (E) (D) (B) (C)

Space For Rough Work

48. The trachea terminates into

(1) Bronchial Tree
(2) Atrium
(3) Bronchi
(4) Alveoli

49. Match the entries in Column – I with those of Column II and choose the correct answer given below :

Column – I		Column – II
(A)	FSH	(P) Normal growth
(B)	GH	(Q) Ovulation
(C)	Prolactin	(R) Parturition
(D)	Oxytocin	(S) Water diuresis
		(T) Milk secretion

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

50. Formation of activation calyx in the egg takes place

(1) Before fertilization
(2) After fertilization
(3) At the time of Cleavage
(4) At the time of Amphimixis

51. Which of the following part of Cockroach leg is attached to thorax ventrally ?

(1) Trochanter
(2) Claw
(3) Femur
(4) Coxa

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52. Match the entries in Column – I with those of Column – II and choose the correct answer :

Column – I	Column – II
(A) Cytokinins	(P) Stress hormone
(B) Auxins	(Q) Ripening of fruits
(C) Abscisic acid	(R) Apical dominance
(D) Ethylene	(S) Bolting
	(T) Richmond Lang effect

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

53. Left auricle receives pure blood from the

(1) Pulmonary veins (2) Pulmonary artery

(3) Superior venacava (4) Inferior venacava

54. The semi-digested food that moves down the oesophagus is known as

(1) Bolus (2) Chyme

(3) Rugae (4) Protein

55. During the transportation gases, to maintain the ionic balance chloride ions shifts from

(1) RBC's to plasma (2) Plasma to RBC

(3) Lungs to blood (4) Blood to lungs

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56. Read the statements (A) and (B). Choose the right one :

Statement (A) : Atherosclerosis is a disease characterised by the thickening of arterial walls.

Statement (B) : Deposition of cholesterol and triglycerides in the arterial walls causes atherosclerosis.

(1) Statement (A) is correct, (B) is wrong.

(2) Both the statements are correct but not related to each other.

(3) Both the statements are correct and (B) is the reason for (A).

(4) Both the statements are wrong.

57. Juxtaglomerular cells secrete $\xrightarrow{(A)}$ when there is a fall in $\xrightarrow{(B)}$ ion concentration. Choose the correct pair labelled as A and B.

(1) A : Renin B : Chloride

(2) A : Carbonic unhydrase B : Sodium

(3) A : ATPase B : Potassium

(4) A : Renin B : Sodium

58. Ileocaecal valve is present in between

(1) Colon and large intestine

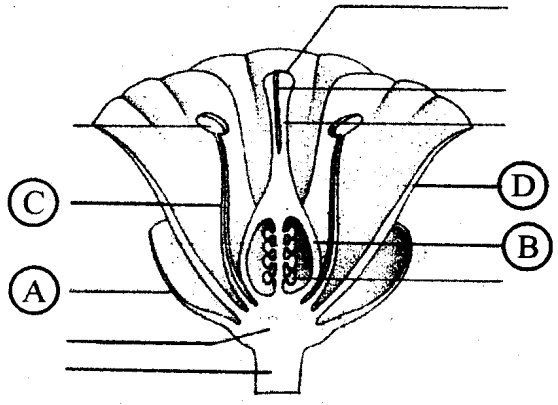
(2) Colon and small intestine

(3) Stomach and small intestine

(4) Cardiac stomach and fundus

Space For Rough Work

59. The diagram given below denotes the various parts of a typical flower. Identify the labelled parts A, B, C and D and choose the correct option :



(1) A = Petals, B = Sepals, C = Stamens, D = Pistil

(2) A = Sepals, B = Pistil, C = Petals, D = Stamens

(3) A = Sepals, B = Pistil, C = Stamens, D = Petals

(4) A = Sepals, B = Petals, C = Pistil, D = Stamens

60. Read the statements A and B and identify the correct choice from those given below :

Statement (A) : The egg of frog is moderately telolecithal.

Statement (B) : Sooner (or) later the cleavage pattern becomes irregular.

(1) Statement (A) is correct, (B) is wrong.

(2) Statement (B) is correct, (A) is wrong.

(3) Both the statements (A) and (B) are correct.

(4) Statement (A) is the reason for statement (B).

Space For Rough Work

A-1