Your Target is to secure Good Rank in NEET- II 2016

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Do not open this Test Booklet until you are asked to do so

1. A seat marked with Reg. No. will be allotted to each student. The student should ensure that he/she occupies the correct seat only. If any student is found to have occupied the seat of another student, both the students shall be removed from the examination and shall have to accept any other penalty imposed upon them.

2. Duration of Test is 3 Hours and Questions Paper Contains 180 Questions. The Max. Marks are 720.

3. Student can not use log tables and calculators or any other material in the examination hall.

4. Student must abide by the instructions issued during the examination, by the invigilators or the centre incharge.

5. Before attempting the question paper ensure that it contains all the pages and that no question is missing.

6. Each correct answer carries 4 marks, while 1 mark will be deducted for every wrong answer. Guessing of answer is harmful.

7. A candidate has to write his/ her answers in the OMR sheet by darkening the appropriate bubble with the help of Blue/ Black Ball Point Pen only as the correct answer(s) of the question attempted.

8. Use of Pencil is strictly prohibited.

Note: In case of any Correction in the test paper, please mail to dlpcorrections@allen.ac.in within 2 days along with Paper code and Your Form No.

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1. A cathode ray tube contains a pair of parallel metal plates 1.0 cm apart and 3.0 cm long. A narrow horizontal beam of electron with a velocity \( 3 \times 10^7 \text{ m/s} \) passed down the tube midway between the plates. When a potential difference of 550 V is maintained across the plates, it is found that the electron beam is deflected so that it just strikes the end of one of the plates. Then the specific charge of the electron in C/kg is :-

(1) \( 1.8 \times 10^9 \) (2) \( 1.8 \times 10^{10} \)

(3) \( 3 \times 10^9 \) (4) \( 1.8 \times 10^{12} \)

2. Maximum velocity of photoelectrons emitted by a metal surface is \( 1.2 \times 10^6 \text{ m/s} \). Assuming the specific charge of the electron to be \( 1.8 \times 10^{11} \text{ C/kg} \), the value of the stopping potential in volt will be :-

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

3. The ratio of de-Broglie wavelength of molecules of hydrogen and helium in two jars kept separately at temperatures of 27°C and 127°C respectively is :-

(1) \( \frac{1}{\sqrt{2}} \) (2) \( \frac{8}{3} \)

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

4. The activity of a sample of radioactive material is \( A_1 \) at time \( t_1 \) and \( A_2 \) at time \( t_2 (t_2 > t_1) \). If its mean life is \( T \), then which of the following is true?

(1) \( A_1 t_1 = A_2 t_2 \)

(2) \( A_1 - A_2 = t_2 - t_1 \)

(3) \( A_2 = A_1 e^{(t_2-t_1)/T} \)

(4) \( A_2 = A_1 (t_2-t_1)/T \)

5. The shortest wavelength in Lyman series is 91.2 nm. The largest wavelength of the series is:-

(1) 121.6 nm (2) 182.4 nm

(3) 243.4 nm (4) 364.8 nm

6. If nucleus \( D \) at rest breaks up into two fragments \( A \) and \( C \) which fly off with velocities in the ratio 8 : 1, then the ratio of radii of the fragments is:-

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

(3) 4 : 1 (4) 2 : 1
7. In the given transistor circuit, the base current is 35 µA. The value of $R_b$ is :-

(1) 100 kΩ  (2) 200 kΩ  (3) 300 kΩ  (4) 400 kΩ

8. In a forward biased p-n junction diode, the potential barrier in the depletion region will be of the form :-

(A)  

(B)  

(C)  

(D)  

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

9. The length of a cylinder is measured with a meter rod having least count 0.1 cm. Its diameter is measured with vernier callipers having least count 0.01 cm. Given that the length is 5.0 cm and diameter is 2.0 cm. The percentage error in the calculated value of the volume will be :-

(1) 1 %  (2) 2 %  (3) 3 %  (4) 4 %
10. The adjoining figure shows the connections of potentiometer experiment to determine internal resistance of a leclanche cell. When the cell is on open circuit the balancing length of the potentiometer wire is 3.4 m and on closing the key $K_2$ the balancing length becomes 1.7 m. If the resistance $R$ through which current is drawn is $10 \, \Omega$ then the internal resistance of the cell is:

1. $0.1 \, \Omega$
2. $1 \, \Omega$
3. $10 \, \Omega$
4. $1.1 \, \Omega$

11. In an experiment for the determination of focal length of the convex mirror a convex lens of focal length 20 cm is placed on the optical bench and an object pin is placed at a distance 30 cm from the lens. When convex mirror is introduced in between the lens and the real and inverted image of the object, the final image of the object O is formed at O itself. If the distance between the lens and the mirror is 10 cm, then the focal length of the mirror is:

1. $10 \, \text{cm}$
2. $20 \, \text{cm}$
3. $25 \, \text{cm}$
4. $50 \, \text{cm}$

12. The dimensional formula for $CR$, where $C$ is the capacitance and $R$ is the resistance, is:

1. $M^0L^0T^0$
2. $M^0L^0T^1$
3. $M^1L^2T^{-3}$
4. $M^1L^1T^{-2}$

13. The linear momentum $p$ of a body of mass 5 kg varies with time $t$ as,

$$p = 5t^2 + t + 5$$

It follows that the body is moving with:

1. constant acceleration
2. constant speed
3. variable acceleration which is increasing with time
4. variable retardation which is decreasing with time
14. A block slides down on an inclined surface of inclination $30^\circ$ with the horizontal. Starting from rest it covers 8 meter in the first two seconds. The coefficient of friction is $(g = 10 \text{ ms}^{-2})$ :-

(1) $\frac{1}{5\sqrt{3}}$  

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

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

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

15. A hemispherical bowl of radius $R$ is rotated about its axis of symmetry which is kept vertical with angular velocity $\omega$. A small block is kept in the bowl. It remains stationary relative to the bowl surface at a position where the radius makes an angle $\theta$ with the vertical. The friction is absent. The value of $\theta$ is :-

(1) $\cos^{-1}\left(\frac{g}{R\omega^2}\right)$  

(2) $\sin^{-1}\left(\frac{g}{R\omega^2}\right)$  

(3) $\tan^{-1}\left(\frac{g}{R\omega^2}\right)$  

(4) none of these

16. A capillary tube is dipped vertically in a liquid. If the liquid surface is hemispherical, then the angle of contact $\theta$ is :-

(1) $\theta = 90^\circ$  

(2) $\theta = 0^\circ$  

(3) $\theta > 90^\circ$  

(4) $0 < \theta < 90^\circ$

17. A thermodynamic cycle of an ideal gas is shown in the figure. Choose the correct option which represents the same cycle :-

(1)  

(2)  

(3)  

(4)
18. A string of mass \( M \) and length \( L \) hangs freely from a fixed point. The velocity of transverse wave along the string at a distance 'x' from the free end will be :-

1. \( \sqrt{gx} \)
2. \( \sqrt{2gx} \)
3. \( 2\sqrt{gx} \)
4. \( \sqrt{2g(L-x)} \)

19. The magnitudes of gravitational field at distance \( r_1 \) and \( r_2 \) from the centre of a uniform sphere of radius \( R \) and mass \( M \) are \( F_1 \) and \( F_2 \) respectively. Then :-

1. \( \frac{F_1}{F_2} = \frac{r_1}{r_2} \) if \( r_1 < R \) and \( r_2 < R \)
2. \( \frac{F_1}{F_2} = \frac{r_1}{r_2} \) if \( r_1 > R \) and \( r_2 > R \)
3. \( \frac{F_1}{F_2} = \frac{r_1^2}{r_2^2} \) if \( r_1 < R \) and \( r_2 < R \)
4. \( \frac{F_1}{F_2} = \frac{r_1^2}{r_2^2} \) if \( r_1 > R \) and \( r_2 > R \)

20. The capacitance of a parallel plate capacitor is 5 \( \mu F \). When a glass slab of thickness equal to the separation between the plates is introduced between the plates, the potential difference reduces to 1/8 of the original value. The dielectric constant of glass is :-

1. 1.6
2. 40
3. 5
4. 8

21. A microammeter has a resistance of 100 \( \Omega \) and a full scale range of 50 \( \mu A \). It can be used as a voltmeter or as a high range ammeter provided a resistance is added to it. Pick the correct range and resistance combination :-

1. 50 V range with 10 k\( \Omega \) resistance in series
2. 10 V range with 200 k\( \Omega \) resistance in series
3. 5 mA range with 10 \( \Omega \) resistance in parallel
4. 5 mA range with 0.1 \( \Omega \) resistance in parallel

22. In a circuit made up of resistance 4 \( \Omega \) and inductance 0.01 H, an alternating emf 200 V at 50 Hz is connected, then the phase difference between the current and the emf in the circuit is:-

1. \( \tan^{-1}\left(\frac{\pi}{4}\right) \)
2. \( \tan^{-1}\left(\frac{\pi}{3}\right) \)
3. \( \tan^{-1}\left(\frac{\pi}{2}\right) \)
4. \( \tan^{-1}(\pi) \)
23. From a building two balls A and B are thrown such that A is thrown upwards and B downwards (both vertically) with the same velocity. If \( v_A \) and \( v_B \) are their respective velocities on reaching the ground then :

(1) \( v_B = v_A \)

(2) \( v_B > v_A \)

(3) \( v_B < v_A \)

(4) their velocities depend on their masses

24. A string fixed at both ends vibrates in three loops. The wave length is 10 cm. The length of string is :

(1) 5 cm (2) 15 cm

(3) 30 cm (4) None

25. One end of a uniform wire of length \( L \) and of weight \( W \) is attached rigidly to a point in the roof and a weight \( W_1 \) is suspended from its lower end. If A is the area of cross-section of the wire, the stress in the wire at a height \( 3L/4 \) from its lower end is :

(1) \( \frac{W + W_1}{A} \) (2) \( \frac{4W + W_1}{3A} \)

(3) \( \frac{3W + W_1}{4A} \) (4) \( \frac{3}{4} \frac{W + W_1}{A} \)

26. A spring of force constant \( k \) is cut into two pieces such that one piece is three times the length of the other. The longer piece will have a force constant of :

(1) \( 3k \) (2) \( \frac{3k}{4} \)

(3) \( \frac{4k}{3} \) (4) 9k

27. The magnitude of magnetic moment of the current loop shown in the figure is :

(1) \( I\ell^2 \) (2) \( \sqrt{2} I\ell^2 \)

(3) zero (4) none of these
28. A circular coil is in y-z plane with centre at the origin. The coil is carrying a constant current. Assuming direction of magnetic field at \( x = -25 \text{ cm} \) to be positive direction of magnetic field, which of the following graphs shows variation of magnetic field along x-axis:

![Graphs](image)

29. A double slit of separation 1.5 mm is illuminated by white light (between 4500 Å – 7000 Å). On a screen 120 cm away coloured interference pattern is formed. If a pinhole is made on this screen at a distance 3.0 mm from the central white fringe, which of the following wavelengths will be absent in the transmitted light?

- (1) 5000 Å
- (2) 6000 Å
- (3) 6500 Å
- (4) 7000 Å

30. A thin prism \( P_1 \) with angle 4° and made from glass of refractive index 1.54 is combined with another prism \( P_2 \) made from glass of refractive index 1.72 to produce dispersion without deviation. The angle of prism \( P_2 \) is:

- (1) 5.33°
- (2) 4°
- (3) 3°
- (4) 2.6°

31. A pendulum consisting of a small sphere of mass \( m \) suspended by an inextensible and massless string of length \( \ell \) is made to swing in a vertical plane. If the breaking strength of the string is 2mg, then the maximum angular amplitude of the displacement from the vertical can be:

- (1) 0°
- (2) 30°
- (3) 60°
- (4) 90°

32. A vector of magnitude ‘\( a \)’ is rotated through an angle \( \alpha \). What is the magnitude of the change in vector?

- (1) \( a \sin \alpha \)
- (2) \( 2a \sin \frac{\alpha}{2} \)
- (3) \( 2a \cos \alpha \)
- (4) \( 2a \cos \frac{\alpha}{2} \)
33. A carpenter has constructed a toy as shown in the adjoining figure. If the density of the material of the sphere is 12 times that of the cone, the position of the centre of mass of the toy is given by :-

1. at a distance 2R from O
2. at a distance 3R from O
3. at a distance 4R from O
4. at a distance 4.5R from O

34. A body cools in a surrounding which is at a constant temperature of \( \theta_0 \). Assuming that it obeys Newton’s law of cooling, its temperature \( \theta \) is plotted against time \( t \). Tangents are drawn to the curve at the points \( A(\theta = \theta_1) \) and \( B(\theta = \theta_2) \). These tangents meet the time-axis at angles \( \alpha_1 \) and \( \alpha_2 \) as shown in the graph then :-

1. \( \tan \alpha_1 = \frac{\theta_2}{\theta_1} \)
2. \( \tan \alpha_2 = \frac{\theta_1}{\theta_2} \)
3. \( \tan \alpha_1 = \frac{\theta_1 - \theta_0}{\theta_2 - \theta_0} \)
4. \( \tan \alpha_2 = \frac{\theta_2 - \theta_0}{\theta_1 - \theta_0} \)

35. A liquid is kept in a cylindrical vessel which is being rotated about a vertical axis through the centre of the circular base. If the radius of the vessel is \( r \) and angular velocity of rotation is \( \omega \), then the difference in the heights of the liquid at the centre of the vessel and the edge is :-

1. \( \frac{r^2 \omega^2}{2g} \)
2. \( \frac{\omega^3}{2gr^2} \)
3. \( \sqrt{2gr} \)
4. none of these
36. The numerical value of the charge on either plate of the capacitor C shown in the figure is :-

(1) CE \qquad (2) \frac{CER_1}{R_1 + r}

(3) \frac{CER_1}{R_2 + r} \qquad (4) \frac{CER_2}{R_2 + r}

37. A large number of bullets are fired in all directions with the same speed v. The maximum area on the ground on which these bullets will spread is :-

(1) \frac{\pi v^2}{g} \qquad (2) \frac{\pi v^4}{g^2} \qquad (3) \frac{\pi^2 v^4}{2g} \qquad (4) \frac{\pi v^2}{2g}

38. ABCDE is a channel in the vertical plane, part BCDE being circular with radius r. A block is released from A and slides without friction and without rolling. The block will complete the loop if h is :-

(1) h \leq \frac{3}{2} r

(2) h \geq \frac{5}{2} r

(3) h \geq \frac{3}{2} r

(4) h \leq \frac{5}{2} r

39. Air is streaming past a horizontal aeroplane wing such that its speed is 120 m/s over the upper surface and 90 m/s at the lower surface. If the density of air is 1.3 kg/m³ and the wing is 10 m long and has an average width of 2 m, then the difference of the pressure on the two sides of the wing is :-

(1) 40.95 N/m² \qquad (2) 409.5 N/m²

(3) 4095 N/m² \qquad (4) 40950 N/m²
40. A police van, moving at 22 m/s, chases a motor-cyclist. The police man sounds horn at 176 Hz, while both of them move towards a stationary siren of frequency 165 Hz as shown in the figure.

- Police van
- Motor cycle
- Stationary siren

If the motor-cyclist does not observe any beats, his speed must be (take the speed of sound = 330 m/s):
1. 33 m/s 
2. 22 m/s 
3. zero 
4. 11 m/s

41. A flute which we treat as a pipe open at both ends is 34 cm along. The fundamental frequency of the flute when all its holes are covered is:
\[ \text{Take velocity of sound in air} = 340 \text{ m/s} \]
1. 100 Hz 
2. 250 Hz 
3. 500 Hz 
4. 280 Hz

42. 540 g of ice at 0°C is mixed with 540 g water at 80°C. The final temperature of the mixture is:
1. 0°C 
2. 40°C 
3. 80°C 
4. less than 0°C

43. Six wires each of cross-sectional area A and length \( \ell \) are combined as shown in the figure. The thermal conductivities of copper and iron are \( K_1 \) and \( K_2 \) respectively. The equivalent thermal resistance between points A and C is:

- \( \frac{\ell(K_1 + K_2)}{K_1K_2A} \)
- \( \frac{2\ell(K_1 + K_2)}{K_1K_2A} \)
- \( \frac{\ell}{(K_1 + K_2)A} \)
- \( \frac{2\ell}{(K_1 + K_2)A} \)
44. The figure shown has two coils of wires placed in close proximity. The current in primary coil P is made to vary with time as shown in the graph, which of the following graphs best represents the variation of the emf induced in the secondary coil S?

![Graphs](image)

(1) ![Graph A](image)
(2) ![Graph B](image)
(3) ![Graph C](image)
(4) ![Graph D](image)

45. A bicycle wheel of radius 0.4 m has 20 spokes. It is rotating at the rate of 180 revolution per minute, perpendicular to the horizontal component of earth's magnetic field of $0.4 \times 10^{-4}$ T. The emf induced between the rim and the centre of the wheel will be:

![Spokes](image)

(1) $6 \times 10^{-3}$ V
(2) $6 \times 10^{-4}$ V
(3) $6 \times 10^{-5}$ V
(4) $6 \times 10^{-6}$ V
46. A molecule of the type AX₄ has square pyramidal geometry hence number of lone pairs on 'A' is :-
(1) 0 (2) 2 (3) 3 (4) 4
47. The percentage ionic character of the HBr molecule, if the dipole moment is 0.63 D & HBr bond length 187.5 Pm is ?
(1) 17% (2) 7% (3) 27% (4) 47%
48. The principal reason that the melting point of NaF is much higher then that of RbBr is that :-
(1) Its solution is unstable in acidic medium (2) It gets reduced to MnO
(3) the two crystals are not isomorphs (4) the internuclear distance (r+ + r−) is greater for RbBr than for NaF
49. Which is not the true statement about KMnO₄ ?
(1) Its solution is unstable in acidic medium (2) It gets reduced to MnO₂ in neutral medium
(3) MnO₄²⁻ changes to Mn²⁺ in basic medium (4) It is self indicator in Fe²⁺ or C₂O₄²⁻ titration
50. Extraction of metal from the ore cassiterite does not involves.
(1) carbon reduction of an oxide ore (2) self reduction of a sulphide ore
(3) removal of copper impurity (4) removal of iron impurity
51. In the reaction :

\[ 2x + B₂H₆ \rightarrow [BH₃(x)₂]^+ [BH₄]^- \]

the amine 'x' will not be :-
(1) NH₃ (2) CH₃NH₂
(3) (CH₃)₂NH (4) (CH₄)₃N
52. Which of the following order is correct ?
(1) Si–Si > C–C > Ge–Ge (Bond energy) (2) H–H > F–F > C–C (Bond energy)
(3) Ge < Sn < Pb (ability of ns²e⁻ to participate in bonding) (4) SiH₄ > SnH₄ > PbH₄ > CH₄ (easy of hydrolysis)
53. Which of the following order is correct ?
(1) He > Ne > Ar > Kr (Adsorption tendency) (2) He > Ne > Ar > Kr (Critical temperature)
(3) He > Ne > Ar > Kr (Boiling point) (4) Xe > Kr > Ar > Ne (Polarisation)
54. Which of the following statement is not correct?
   (1) K[PtCl₃(π-C₂H₄)] Zeise's salt has a planar anion
   (2) [CO(NH₃)₃Cl] will not have optical isomers
   (3) In optically active octahedral complex [Fe(EDTA)]⁻² coordination number of Fe is six.
   (4) [CO(NH₃)₃NO₂Cl & PtCl₂.4NH₃] can be differentiated by AgNO₃ solution qualitatively.

55. Solubility of sulphates of group-2 elements decreases down the group due to :-
   (1) decreasing hydration energy
   (2) high ionisation energy
   (3) increase in melting point
   (4) all of these

56. The incorrect relation among the following is :-
   (1) (A) IE₁ < (Mg) IE₁
   (2) (Mg) IE₂ > (Na) IE₂
   (3) (Na) IE₁ < (Mg) IE₁
   (4) (Mg) IE₃ > (A) IE₃

57. When first ionisation energy is plotted against the atomic number, the peaks in curve are occupied by :-
   (1) halogens
   (2) rare gases
   (3) alkali metals
   (4) transition elements

58. The total number of possible isomers of the complex compound [Cu(NH₃)₄][PtCl₄] is :-
   (1) 3 (2) 6 (3) 5 (4) 4

59. H₂O₂ is manufactured these days by :-
   (1) electrolysis of 50% H₂SO₄
   (2) the action of H₂SO₄ on Na₂O₂
   (3) the action of H₂O₂ on BaO₂
   (4) burning hydrogen in access of oxygen

60. Which of the following compounds is not coloured ?
   (1) Na₂[CuCl₄]
   (2) Na₂[CdCl₄]
   (3) Fe₄[Fe(CN)₆]₃
   (4) none of these
61. HCl does not show peroxide effect since

\[ CH_2=CH=CH_2 + X \rightarrow CH_2=CH-CH_2X \] (I)

\[ CH_3CH=CH_2 + X + H-X \rightarrow CH_3CH=CH_2X+X \] (II)

(1) (I) & (II) both steps are endothermic
(2) (I) is exothermic and (II) is endothermic
(3) (I) is endothermic and (II) is exothermic
(4) I & (II) both are exothermic steps

62. Incorrect IUPAC name is :-

(1) \( CH_3CH=CH_2 \)
(2) Ethyl chloride
(3) Diethylamine
(4) All

63. \( NO_2 \rightarrow \) R

R is :-

(1) Sn + HCl
(2) Zn + NH_4Cl
(3) Pd + H_2
(4) LiAlH_4

64. the reaction is known as :-

(1) Rosenmund's reduction
(2) Hoffmann's degradation
(3) Schotten Baumann reaction
(4) Friedel craft reaction

65. \( Cl \rightarrow Br \) ; Y is (major)

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

66. HCl \( \rightarrow \) Br

\[ CH_2=CH=CH_2 + X \rightarrow CH_2=CH-CH_2X \] (I)

\[ CH_3CH=CH_2 + X + H-X \rightarrow CH_3CH=CH_2X+X \] (II)

(1) (I) \( \Rightarrow \) (II) \( \Rightarrow \)
(2) (I) \( \Rightarrow \) (II) \( \Rightarrow \)
(3) (I) \( \Rightarrow \) (II) \( \Rightarrow \)
(4) (I) \( \Rightarrow \) (II) \( \Rightarrow \)

67. \( \text{NO}_2 \rightarrow \) R

R is :-

(1) Sn + HCl
(2) Zn + NH_4Cl
(3) Pd + H_2
(4) LiAlH_4

68. \( Cl \rightarrow Na \) \( \rightarrow \) Br

\( \text{dryether} \rightarrow \) Br

monobromination \( \rightarrow \) Y ; Y is (major)

(1) (2) (3) (4)
66. Incorrect match is :-

<table>
<thead>
<tr>
<th>Polymer</th>
<th>Monomer</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Novolac</td>
<td>Phenol and formaldehyde</td>
</tr>
<tr>
<td>(2) Nylon 6</td>
<td>Caprolactum</td>
</tr>
<tr>
<td>(3) BuNa-N</td>
<td>1, 3-Butadiene and styrene</td>
</tr>
<tr>
<td>(4) Natural rubber</td>
<td>cis-Isoprene</td>
</tr>
</tbody>
</table>

67. Which give positive iodoform test :-

<table>
<thead>
<tr>
<th>Equation</th>
<th>Reaction</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{H}_2\text{O/Zn} \times + \text{Y} + \text{Z} )</td>
<td>( (\text{C}_3\text{H}_6\text{O}) \times \text{Y} + \text{Z} )</td>
<td>( (\text{C}_3\text{H}_6\text{O}) \times \text{Y} + \text{Z} )</td>
</tr>
</tbody>
</table>

(1) X and Y  (2) Only X  (3) X and Z  (4) X, Y, and Z

68. Most reactive for nucleophilic substitution reaction is :-

69. Chlordiazepoxide is :-

(1) Narrow spectrum antibiotic
(2) Mild tranquilizer
(3) Antihistamine
(4) Broad spectrum antibiotic

70. Most stable carbocation is :-

71. \( \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Na}} \text{P} \xrightarrow{\text{CH}_3\text{Cl}} \text{Q} \); Q is :-

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{CH}_3\text{CHOHCH}_3 )</td>
<td>(1) ( \text{CH}_3\text{CHOHCH}_3 )</td>
</tr>
<tr>
<td>( \text{CH}_3\text{CHOHCH}_3 )</td>
<td>(2) ( \text{CH}_3\text{CHOHCH}_3 )</td>
</tr>
<tr>
<td>( \text{CH}_3\text{CHOHCH}_3 )</td>
<td>(3) ( \text{CH}_3\text{CHOHCH}_3 )</td>
</tr>
<tr>
<td>( \text{CH}_3\text{CHOHCH}_3 )</td>
<td>(4) ( \text{CH}_3\text{CHOHCH}_3 )</td>
</tr>
</tbody>
</table>
72. sp² carbon is not present in :-
   (1) Acetonitrile    (2) Glycine
   (3) Tartaric acid  (4) Formic acid

73. Chiral molecule is :-

74. The order of acidic strength of X, Y and Z is :-
   (1) X > Y > Z    (2) Z > X > Y
   (3) Y > Z > X    (4) Z > Y > X

75. Ethyl amine and aniline can be distinguished by:-
   (1) Br₂/H₂O    (2) CHCl₃/KOH
   (3) C₂H₅SO₂Cl  (4) All

76. 10 CC of H₂O₂ solution (d = 1 g/mL) when reacted with KI solution produced 0.5 g of iodine. Calculate the percentage purity of H₂O₂:-
   (1) 6.69%      (2) 0.669%
   (3) 0.34%      (4) 0.334%

77. 2NOBr(g) ⇌ 2NO(g) + Br₂(g). If nitrosyl bromide (NOBr) is 40% dissociate at certain temperature and a total pressure of 0.3 atm. K_p for the reaction:
   2NO(g) + Br₂(g) ⇌ 2NOBr(g) is :-
   (1) 45          (2) 25
   (3) 0.022       (4) 0.25

78. Rate constant K = 2.303 min⁻¹ for a particular reaction the initial concentration of the reactant is 1 mol/litre then rate of reaction after 1 minute is :-
   (1) 2.303 M min⁻¹  (2) 0.2303 M min⁻¹
   (3) 0.1 M min⁻¹    (4) None

79. During titration of 0.1 M CH₃COOH and 0.1 M KOH solution what will be the pH of solution after 40% neutralisation of acid ?
   [K_a for CH₃COOH = 2 × 10⁻⁵]
   (1) 4.88          (2) 5.12
   (3) 4.52          (4) 4.16
80. Formic acid is a weak acid and hydrochloric acid is a strong acid. It follows that the :-
(1) \([\text{OH}^-]\) of a 0.01 M HCl(aq.) will be more than that of 0.01 M HCOOH(aq.)
(2) Solution containing 0.1 M NaOH(aq.) and 0.1 M HCOONa(aq.) is a buffer solution.
(3) pH of 10^{-8} M HCl (aq.) will be 9 at 25°C
(4) pH of a solution formed by mixing equimolar quantities of HCOOH and HCl will be less than that of a similar solution formed from HCOOH and HCOONa.

81. A graph was plotted between molar conductivity of various electrolytes (NaCl, HCl and NH4OH) and \(\sqrt{C}\) (in mol L^{-1}). Correct setting :-

![Molar Conductivity Graph]

(1) I (NaCl), II (HCl), III (NH4OH)
(2) I (HCl), II (NaCl), III (NH4OH)
(3) I (NH4OH), II (HCl), III (NaCl)
(4) I (NH4OH), II (NaCl), III (HCl)

82. For the cell,
Pt | Cl₂(g) | Cl⁻(aq.) || Cl⁻(aq.) | Cl₂(g) | Pt
(0.4 bar) 0.1 M 0.01 0.2 bar
the measured potential at 298 K is :-
(1) 0.051 V
(2) 0.051 V
(3) 0.052 V
(4) 0.0255 V

83. Two liquid A and B have \(P_A°\) and \(P_B°\) in the ratio of 1 : 3 and the ratio of number of moles of A and B in liquid phase are 1 : 3 then mole fraction of 'A' in vapour phase in equilibrium with the solution is equal to :-
(1) 0.1
(2) 0.2
(3) 0.5
(4) 1

84. Consider following solutions :-
(I) 1 M glucose (aq.)
(II) 1 M sodium chloride (aq.)
(III) 1 M acetic acid in benzene
(IV) 1 M ammonium phosphate (aq.)
(1) III is hypertonic of I, II, IV
(2) IV is hypertonic of I, II, III
(3) I, II, IV are hypotonic of III
(4) All are isotonic solutions

80. फायदे का कारण लक्ष्य के लक्ष्य हैं अनुमान का अनुमान का कोन से लखते हैं
(1) 0.01M HCl(aq.) के [OH^-] 0.01M HCOOH(aq.)
(2) 0.1 M NaOH (aq.) तथा 0.1 M HCOONa(aq.)
(3) 25°C पर 10^{-8} M HCl (aq.) की pH = 9 होगी नहीं
(4) HCOOH के HCl की समान लक्ष्य आंशिक भिन्नता से बने विलंब हो HCOOH तथा HCOONa से बने साद विलंब के कारण हो सकते हैं 

81. विगत I नू विद्यमान (NaCl, HCl तथा NH4OH) की मात्राओं के लक्ष्य का फ़ायदे गया है वे कोन से हैं

![Molar Conductivity Graph]

(1) I (NaCl), II (HCl), III (NH4OH)
(2) I (HCl), II (NaCl), III (NH4OH)
(3) I (NH4OH), II (HCl), III (NaCl)
(4) I (NH4OH), II (NaCl), III (HCl)

82. सेतु
Pt | Cl₂(g) | Cl⁻(aq.) || Cl⁻(aq.) | Cl₂(g) | Pt
(0.4 bar) 0.1 M 0.01 0.2 bar
के लिए298 K । विलंब का समान नहीं तकरारें
(1) 0.051 V
(2) 0.051 V
(3) 0.102 V
(4) 0.0255 V

83. दो क्षेत्र A तथा B के \(P_A°\) तथा \(P_B°\) के अनुदान पर 3 हैं तथा 4 तथा \(\text{विल्यम के दृश्य} 5\) \(\text{विल्यम} A\) \(\text{के मात्रा} \) अनुदान हैं ते विल्यम के दृश्य 6 \(\text{समान विल्यम} A\) \(\text{के मेट्रा} 7\) \(\text{दृश्य} 8\) \(\text{नहीं} \) हैं
(1) 0.1
(2) 0.2
(3) 0.5
(4) 1

84. निम्न विल्यम के फ़ायदे हुए करें
(I) 1 M glucose (aq.)
(II) 1 M sodium chloride (aq.)
(III) बैंगन लेट्स दिख तनां के तल
(IV) 1 M ammonium phosphate (aq.)
(1) III अनुमान सी हैं I, II, IV से
(2) IV अनुमान सी हैं I, II, III से
(3) I, II, IV अनुमान सी हैं III से
(4) सभी विल्यम समान सी हैं
85. A crystal is made of particles X and Y. X forms fcc packing and Y occupies all the octahedral voids. If all the particles along one body diagonal are removed then the formula of the crystal would be: -
(1) $X_4Y_3$  
(2) $X_5Y_4$  
(3) $X_4Y_5$  
(4) None of these

86. Consider the reaction at 300 K
$$C_6H_6(l) + \frac{15}{2}O_2(g) \rightarrow 6CO_2(g) + 3H_2O(l); \quad \Delta H = -3271 \text{ kJ}$$
What is $\Delta U$ for the combustion of 1.5 mole of benzene at 27°C.
(1) $-3267.25 \text{ kJ}$  
(2) $-4900.88 \text{ kJ}$  
(3) $-4906.5 \text{ kJ}$  
(4) $-3274.75 \text{ kJ}$

87. In an adiabatic process the work involved during expansion or compression of an ideal gas is given by: -
(1) $nC_v\Delta T$  
(2) $\frac{nR}{(\gamma-1)}(T_2 - T_1)$  
(3) $-2.303 nRT \log \frac{V_2}{V_1}$  
(4) (1) and (2) both

88. 80 ml of $O_2$ takes 2 minute to pass through the hole. What volume of $SO_2$ will pass through the hole in 3 minute ?
(1) $120 \times \sqrt{2}$  
(2) $\frac{120}{\sqrt{2}}$  
(3) $\frac{12}{\sqrt{2}}$  
(4) None

89. Which one of the following is not applicable to chemisorption: -
(1) Heat of adsorption is negative  
(2) It is irreversible  
(3) It is very specific  
(4) It forms mono-molecular layer

90. If P.E. of 3rd shell is $-20 \text{ eV/atom}$ then find I.P. of 3rd shell of that element:
(1) $-20 \text{ eV/atom}$  
(2) $1.6 \times 10^{-18} \text{ J/atom}$  
(3) $-10 \text{ eV/atom}$  
(4) $3.2 \times 10^{-18} \text{ J/mole}$
91. Identify the given figure :-

[Diagrams of Marchantia, Funaria, Sphagnum, and Riccia]

(1) Marchantia  (2) Funaria  (3) Sphagnum  (4) Riccia

92. Oogamous type of sexual reproduction is found in ?

(1) Chlamydomonas & Spirogyra  (2) Chlamydomonas & Ulothrix  (3) Spirogyra & Ulothrix  (4) Volvox & Fucus

93. Match the following and choose the correct option :-

i. aestivum  A. Family  ii. Poales  B. Kingdom
iii. Triticum  C. Order  iv. Plantae  D. Specific epithet
v. Poaceae  E. Genus

(1) i - D, ii - C, iii - E, iv - B, v - A
(2) i - E, ii - D, iii - B, iv - A, v - C
(3) i - D, ii - E, iii - B, iv - A, v - C
(4) i - E, ii - C, iii - B, iv - A, v - D

94. The number of species that are known and described are about :-

(1) 1.7 – 1.8 lac
(2) 17 – 18 million
(3) 7 – 8 million
(4) 1.7 – 1.8 million

95. Which is haploid in gymnosperms?

(1) Pollen grain, megaspore and root.
(2) Spore mother cell, root and leaf.
(3) Sporophyll, pollen grain and megaspore.
(4) Pollen grain, megaspore and endosperm.

96. Toad stool and Bracket fungi belong to the class :-

(1) Phycomycetes
(2) Ascomycetes
(3) Basidiozymes
(4) Deuteromycetes
97. Cell wall of bacteria is composed of:
    (1) Cellulose    (2) Glycogen
    (3) Chitin        (4) Peptidoglycan

98. A special membranous structure which is formed by the extensions of plasma membrane into the cell, is called as:
    (1) Slime layer     (2) Capsule
    (3) Mesosome       (4) Plasmid

99. Given below the diagrammatic sketch of mitochondria. Identify the parts labelled A, B, C and D. Select the right option about it.

100. Consider the following four statement (a-d) and select the option which includes all the correct ones.

    (a) The golgi apparatus principally performs the function of packaging materials and helps in middle lamella formation
    (b) Golgi apparatus is the important site of formation of glycoprotein and glycolipid
    (c) Mitochondria are the site of aerobic respiration. They produce cellular energy in the form of ATP
    (d) Cristae decrease the surface area

Options
    (1) Statement b, c and d  (2) Statement a, b
    (3) Statement a, b, c  (4) Statement c, d
101. In which one of the following options two events of cell cycle are not correctly matched with their particular phase?

<table>
<thead>
<tr>
<th>Events</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) (i) Centriole duplication in the cytoplasm of animal cell</td>
<td>S</td>
</tr>
<tr>
<td>(ii) DNA replication in nucleus</td>
<td></td>
</tr>
<tr>
<td>(2) (i) Splitting of centromere</td>
<td>Anaphase</td>
</tr>
<tr>
<td>(ii) Movement of centriole toward opposite poles of cell</td>
<td></td>
</tr>
<tr>
<td>(3) (i) Activity of recombinase enzyme</td>
<td>Pachytene</td>
</tr>
<tr>
<td>(ii) Crossing over between non sister chromatid</td>
<td></td>
</tr>
<tr>
<td>(4) (i) Terminalisation of chiasmata</td>
<td>Diakinesis</td>
</tr>
<tr>
<td>(ii) Nucleolus disappear</td>
<td></td>
</tr>
</tbody>
</table>

102. Three of the following statements regarding cell organelles are correct while one is incorrect which one is incorrect?

1. In cart wheel like organisation an arrangement of microtubules is referred to as 9 + 0 array.
2. Sedimentation coefficient is an indirect measurement of size and density.
3. Leucoplasts are the plastids of varied shape and sizes with carotene pigment.
4. Larger and more numerous nucleoli are present in cells actively carrying out protein synthesis.
103. Which of the following cell organelles involve in protein synthesis?
   (1) RER  (2) SER
   (3) Golgibody  (4) Vacuole

104. Which of the following points are correct about given animal?

(A) Diploblastic, Radial symmetry
(B) Sexes are separate
(C) Exclusively marine
(D) Digestion is both extracellular and Intracellular

Options :-
(1) A,B,C,D  (2) A,C,D
(3) A,C  (4) B,C,D

105. How many of the following animals are an example of protochordates?

Ascidia, Branchiostoma, Salpa, Balanoglossus, Saccoglossus, Doliollum, Ophiura. Antedon.

(1) Three  (2) Four
(3) Five  (4) Two

106. How many informations are correct about the given animal?

(i) Triploblastic, bilateral symmetry.
(ii) Metamerically segmented and coelomate animals.
(iii) Dioecious
(iv) Closed circulatory systems present
(v) Lateral appendages parapodia present

(1) Five  (2) Four
(3) Two  (4) Three
107. Examine the figures A, B, C and D. In which one of four options all the items A, B, C and D are correct?

(A) Petromyzon, B-Scoliodon,
C-Pristis, D-Catla

(B) Scoliodon, B-Pristis,
C-Hippocampus, D-Catla

(C) Scoliodon, B-Pristis,
C-Hippocampus, D-Labeo

(D) Scoliodon, B-Pristis,
C-Hippocampus, D-Clarias

108. Identify the given floral diagram and choose suitable floral formula from the following.

(A) \( \text{K C A} \)
(B) \( \text{P A} \)
(C) \( \text{K C A} \)
(D) \( \text{P A} \)

109. Which of the following is/are not characteristic features of Asteraceae family?

(I) Cypsela fruit
(II) Syngenesious stamens
(III) Marginal placation
(IV) Capitulum inflorescence
(V) Superior ovary

(1) II and IV
(2) III and V
(3) II and III
(4) III only
110. Read the following five statements (A-E) and answer as asked next to them.
(A) In *Sesbania* flower, the stamens are diadelphous.
(B) In *Sesbania* flower, number of stamens is ten.
(C) In racemose inflorescence, flowers are arranged in basipetal order.
(D) Grain of Maize is a caryopsis fruit.
(E) In dicot stem, cork cambium develops from cells of pericycle.
How many of the above statements are correct?
(1) Four (2) One (3) Two (4) Three

111. Annual rings are formed due to activity of :-
(1) Cork cambium
(2) Pro cambium
(3) Vascular cambium
(4) Inter fascicular cambium

112. Identify the tissue shown in the diagram and select correct match with its function :-

(1) Xylem - transport water and minerals
(2) Phloem - transport food material
(3) Xylem - transport food material
(4) Phloem - transport water and minerals

113. Which of the following is a non-endospermic seed?

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

114. Select wrong pair :-
(1) Maize - Wind pollination
(2) Water lily - Water pollination
(3) Water hyacinth - Insect pollination
(4) Yucca - Insect pollination
115. Group of cell at chalazal end of embryosac is known as: -
(1) Egg cell (2) Egg apparatus (3) Synergids cell (4) Antipodal cells

116. In following diagram identify the labelled structures A, B, C and D: -

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Phallic gland</td>
<td>Testis</td>
<td>Seminal vesicle</td>
<td>Ejaculatory duct</td>
</tr>
<tr>
<td>2</td>
<td>Ejaculatory duct</td>
<td>Phallic gland</td>
<td>Testis</td>
<td>Seminal vesicle</td>
</tr>
<tr>
<td>3</td>
<td>Seminal vesicle</td>
<td>Ejaculatory duct</td>
<td>Phallic gland</td>
<td>Testis</td>
</tr>
<tr>
<td>4</td>
<td>Testis</td>
<td>phallic gland</td>
<td>Seminal vesicle</td>
<td>Ejaculatory duct</td>
</tr>
</tbody>
</table>

117. In how many of the following organs, inner surface has cilia?
Fallopian Tube, Trachea, Bronchioles, Stomach, Intestine
(1) Four (2) Three (3) Two (4) One

118. Identify the gland shown below as well as the related secretion from it and select the right option for the two together.

Option: -

<table>
<thead>
<tr>
<th>Gland</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Multicellular gland</td>
<td>Mucus</td>
</tr>
<tr>
<td>(2) Unicellular gland</td>
<td>Ear wax</td>
</tr>
<tr>
<td>(3) Sweat gland</td>
<td>Sweat</td>
</tr>
<tr>
<td>(4) Goblet cell</td>
<td>Mucus</td>
</tr>
</tbody>
</table>

115. कोंडक का सुम है जो $\frac{1}{26}$ उप के कोंड के निकाल गी चिनाह है, उसे जाना जाता है.
(1) अंड के शिखर (2) अंड का पतल (3) खा फा के शिखर (4) प्रकरण या के त्रिकोण अंड

116. निम्न चित्र में से चित्रों C और D के फाला में

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>फाला गंभीर</td>
<td>भारी</td>
<td></td>
<td>नफस तपस्तक</td>
</tr>
<tr>
<td>2</td>
<td>सं. भारी</td>
<td>फाला गंभीर</td>
<td>भारी</td>
<td>नफस तपस्तक</td>
</tr>
<tr>
<td>3</td>
<td>भारी गंभीर</td>
<td>सं. भारी</td>
<td>नफस तपस्तक</td>
<td>भारी</td>
</tr>
<tr>
<td>4</td>
<td>भारी</td>
<td>फाला गंभीर</td>
<td>सं. भारी</td>
<td>नफस तपस्तक</td>
</tr>
</tbody>
</table>

117. निम्न में से कितने अंड गायें में, $\frac{1}{2}$ तीन सह में फाला है?
(1) चार (2) तीन (3) दो (4) एक

118. नीचे दिखाए गये ग्रंथि के चित्र के उपर से निकलने वाले चित्र के साथ फा में फाला का घर है। इन दोनों के एकाधि किसी विकल्प में खाली दिया गया है।

विकल्प: -

<table>
<thead>
<tr>
<th>विकल्प</th>
<th>Gland</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) बाहु व शिखर की द्राघर</td>
<td>द्राघर</td>
<td>मूलम</td>
</tr>
<tr>
<td>(2) एकाधि की शिखर पतल</td>
<td>द्राघर</td>
<td>मूलम</td>
</tr>
<tr>
<td>(3) सं. द्राघर के भारी</td>
<td>नफस</td>
<td>नफस</td>
</tr>
<tr>
<td>(4) गो चलने वाले शिखर की द्राघर</td>
<td>मूलम</td>
<td></td>
</tr>
</tbody>
</table>
119. Which of the following secondary metabolite is a toxin?
(1) Codeine  (2) Monoterpenes  
(3) Concanavalin – A  (4) Ricin

120. The structure given below may represent :-

(1) Cellulose, starch and glycogen  
(2) Starch, glycogen and inulin  
(3) Chitin, starch and glycogen  
(4) Starch and glycogen

121. The lowest molecular weight compounds in acid insoluble fraction are :-
(1) Proteins  
(2) Nucleic acids  
(3) Polysaccharides  
(4) Lipids

122. Find wrong about passive movement of water :-
(1) Higher TP → Lower TP  
(2) Lower OP → Higher OP  
(3) Higher DP → Lower DP  
(4) Higher OP → Lower OP

123. Correct expression of DPD for plasmolysed cell is: -
(1) DPD = OP + TP  
(2) DPD = OP  
(3) DPD = TP  
(4) DPD = OP – TP

124. Which one of the following hormone play important role in seed development, maturation and dormancy?
(1) ABA  
(2) IAA  
(3) GA  
(4) CK

125. Ethylene is synthesised in large amounts by :-
(1) Young leaves  
(2) Ripening fruits  
(3) Meristem  
(4) Flowers

126. Non cyclic photophosphorylation involves all except :-
(1) Activity of both PS-I and PS-II  
(2) Photolysis of water at PS-I  
(3) Production of ATP  
(4) Presence of light
127. Calvin cycle occurs in which types of cells in $C_4$ and CAM plants respectively:
(1) Mesophyll cells bundle sheath cells
(2) Mesophyll cells only
(3) Bundle sheath only
(4) Bundle sheath cells, Mesophyll cells

128. The central portion of root nodules of leguminous plants is red or pink due to presence of:
(1) Leg-haemoglobin
(2) Anthocyanin
(3) Stanining
(4) Ferredoxin

129. How many molecules $CO_2$ are released in Krebs cycle with respect to each glucose molecule:
(1) 2
(2) 3
(3) 4
(4) 6

130. A young person is suffering from tongue cancer. During the treatment his tongue is completely removed, then which of the following situation will describe the person that he will not be able to:
(1) Taste sweet & salty.
(2) Not able to taste sweet, but able to taste salty.
(3) Perceive the odour of rose but not able to taste sweet and salt.
(4) Taste sweet and salty, but not perceive to the odour of rose.

131. Select the odd pair from following?
(1) Pepsin, Renin and lipase
(2) Amylase, lipase and maltase
(3) Pepsin, Trypsin and chymotrypsin
(4) Nuclease, Elastase and ptyalin

132. The figure below shows events of nerve impulse conduction. Select the option giving correct identification what it represents.

1) Figure [A] – Site (a) is showing repolarisation.
2) Figure [B] – Site (c) is showing hyperpolarisation.
3) Figure [A] and [B] – Site (a) is showing depolarization.
4) Figure [B] – Site (a) is in repolarisation period.

127. $C_4$ तथा CAM पदार्थों में क्रमांक के दिन चक किए जाने वाले घरों में अलग हैं:
(1) पांव में 1 का अच्छा सिखाया रहा, यू ला रोश में निका दृश्य है।
(2) के बाद पा में 1 का अच्छा सिखाया रहा।
(3) के बाद पूर्व ला रोश में निका दृश्य है।
(4) पूर्व ला रोश में निका दृश्य है।

128. टोली के पंप्स में की जा, वे गूँ में दिख अन्य जैसे-जैसे पर सेंट हैं।
(1) ले गांव में बना बिन (2) फू धां या सिन
(3) रेक (4) फे रेड (4) फे दिया किसा

129. गर्मी कर लू के जन्म संदर्भ में कृपया सुझाव के लिए हैं:
(1) 2
(2) 3
(3) 4
(4) 6

130. दूर भाग या स्पष्ट वा तित के जैसे बाजा के रूप से हो रहा है उसका बूं जैसा पूरा था है। दिया गया है, ले निर्देश न में अब तक उस स्तंभमें नहीं रखने वाला गारू ना की करके गयी।
(1) मोटा आन्त नकली बाहर दे
(2) मोटा अभ भाग नहीं लगा सकता है।
(3) गुरु जव का सुगं धे लेकर रखता है
(4) मोटा अया आन्त नकली बाहर दे सकता है।

131. निर्देश में ये सिखा कृपया या फिर को कांटी ए निर्देश:
(1) पे पिसा रे निम्न धान ला टाइ डी जा
(2) फूं इले जल डी जल का रोटा जा
(3) पे पिसा डी. पिसा धान बाजा जी मिना
(4) दूर वा जलाहा रहे जला टांडी ना।

132. नीचे दिये गये विषय में ये निर्देश आ बाजे गो संबंध की अटक था दे। चौथे दे गये हैं। उसकी निर्देश पता चुना न वकरें जे अब में की काम न न दे। रहा हो:

1) Figure [A] – Site (a) is showing repolarisation.
2) Figure [B] – Site (c) is showing hyperpolarisation.
3) Figure [A] and [B] – Site (a) is showing depolarization.
4) Figure [B] – Site (a) is in repolarisation period.
133. Symptoms in a growing baby like stunted growth, mental retardation, abnormal skin, deaf-mutism, protruding tongue etc. are developed due to :-
(1) Hyperthyroidism
(2) Hypothyroidism during pregnancy
(3) Simple goitre
(4) Deficiency of GH

134. Which of the disorders occur due to Hyposecretion of growth hormone ?
(1) Midgets
(2) Acromegali
(3) Gigantism
(4) Cretinism

135. These processes occurs during repolarisation of nerve fibre :-
(a) Open Na\(^+\) channel
(b) Closed Na\(^+\) channel
(c) Closed K\(^+\) channel
(d) Open K\(^+\) channel
(1) b and d (2) a and c
(3) b and c (4) a and b

136. In given diagram, identify A, B, C, D and E and choose the correct option from the given table :-

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Cornea</td>
<td>Iris</td>
<td>Fovea</td>
<td>Vitreous Chamber</td>
<td>Sclera</td>
</tr>
<tr>
<td>(2)</td>
<td>Sclera</td>
<td>Vitreous Chamber</td>
<td>Cornea</td>
<td>Fovea</td>
<td>Iris</td>
</tr>
<tr>
<td>(3)</td>
<td>Sclera</td>
<td>Vitreous Chamber</td>
<td>Fovea</td>
<td>Cornea</td>
<td>Iris</td>
</tr>
<tr>
<td>(4)</td>
<td>Sclera</td>
<td>Vitreous Chamber</td>
<td>Cornea</td>
<td>Iris</td>
<td>Fovea</td>
</tr>
</tbody>
</table>

133. फ़े कहते हूँ एक चेहरे में लश्च पैदा से अस्वस्थिति सा नाशक विशिष्ट पल, आर मा - यह बचा, गा - बहा फाय, बा हरिनिकं कि हा इर वर्त, किंके बा रा पे दृढ़ होते हैं
(1) अल्बम इर इड्स (अल्बिक्रृत)
(2) गन्धारवस्था में अल्बम इर इड्स
(3) गलाण्ड
(4) वृ दिखायें याने न की कमी

134. वृ दिखायें याने अक रिमूवल से हो ने बाला है ?
(1) मिड गे टस
(2) अद चिंता याच
(3) अलिसा याच
(4) निमटी निमट

135. ये प्रक्रिया तंत्रिका रेशे के यु पु: धू ची कण के दृढ़ है :-
(a) खु लेखा चे नल
(b) व देना चे नल
(c) खू देना चे नल
(d) खु लेखा चे नल
(1) b खू d (2) a खू c
(3) b खू c (4) a खू b

136. दिए गए चित्र में A, B, C, D तथा E को फ़ू ची निमटी निमटन स्यारे में विशब्दिका पक्ष चुनना व को?
137. Find out the correct statement about muscle fibres:
   (1) Cardiac muscle fibres are multinucleated, unbranched and striated
   (2) Skeletal muscle fibres are uninucleated, unbranched and striated.
   (3) Smooth muscle fibres are uninucleated, unbranched and unstriated
   (4) Skeletal muscle fibres are short, multinucleated and branched.

138. Heart beat becomes faster on stimulation by:
   (1) Sympathetic nerves and acetylcholine
   (2) Sympathetic nerves and adrenaline
   (3) Parasympathetic nerves and acetylcholine
   (4) Parasympathetic nerves and thyroxine

139. Which of the following statements is incorrect?
   (1) The skull, Ribs, Sternum and Vertebral column constitute axial skeleton.
   (2) The number of cervical vertebrae are seven in almost all mammals including human beings.
   (3) The 8th, 9th and 10th pairs of ribs do not articulate directly with the sternum, these are called floating ribs.
   (4) Thoracic vertebrae, ribs and sternum together form the rib cage.

140. Which one of the following options is correctly matched with its category?

<table>
<thead>
<tr>
<th>Group</th>
<th>Type of Circulation</th>
<th>Blood is oxygenated by</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Fish</td>
<td>Single circulation</td>
</tr>
<tr>
<td>(2)</td>
<td>Amphibia</td>
<td>Double circulation</td>
</tr>
<tr>
<td>(3)</td>
<td>Reptiles</td>
<td>Incomplete double circulation</td>
</tr>
<tr>
<td>(4)</td>
<td>Birds</td>
<td>Incomplete double circulation</td>
</tr>
</tbody>
</table>

141. CO is more toxic than CO₂ because it:
   (1) Damages lungs
   (2) Form acid with water
   (3) Affects the nervous system
   (4) Reduces the oxygen carrying capacity of haemoglobin.
142. Read the following steps of inspiration.
(a) Increases thoracic volume
(b) Air move into lungs
(c) Contraction in diaphragm and EICM
(d) Increases pulmonary volume
(e) Lungs expand
(f) Decreases the intra pulmonary pressure (IPP)
Find out the correct sequence of these steps.
(1) a, b, c, d, e, f  (2) c, d, a, e, f, b
(3) c, a, e, d, f, b  (4) c, e, d, a, f, b

143. Which substances are reabsorbed actively in nephron?
(1) Glucose, water
(2) Glucose, Na+
(3) Amino acids, Urea
(4) Na+, water

144. During Micturition:
(1) Urinary bladder relaxes and ureter contracts
(2) Urinary bladder contracts and ureter relaxes
(3) Urinary bladder relaxes and urethra contracts
(4) Urinary bladder contracts and urethra relaxes

145. Consider the following statement - The genetic code is said to be degenerate and universal which mean that:
(1) Amino acid may have more than one Codon and Codon have same genetic information in different organisms
(2) One Codon have more than one amino acid
(3) Same Codon are present in different organism with different genetic information
(4) Codon are made up of 3 N-base

146. A eukaryotic m-RNA and protein is synthesized are shown in given figure.

```
A ----> B ----> C ----> D

The end A and D and segment B and C are:
(1) A-3', B-cap, C-Poly A, D-5'-' 
(2) A-3', B-Poly A, C-cap, D-5'-' 
(3) A-5', B-cap, C-Poly A, D-3' 
(4) A-5', B-Poly A, C-cap, D-3' 
```
147. Which of the following statement is not correct?
(1) RNA can directly code for the synthesis of proteins.
(2) Both DNA and RNA are able to mutate.
(3) DNA being unstable mutate at a faster rate.
(4) AUG has dual functions.

148. "Gamete are never hybrid". This statement is related to law of :-
(1) Dominance
(2) Independent assortment
(3) Segregation
(4) Random Fertilisation

149. If a character is controlled by four alleles of a gene, then the possible genotypes would be :-
(1) 10 (2) 15 (3) 20 (4) 21

150. Sex of the chicks is determined by :-
(1) Male parent (2) Female parent
(3) Environment (4) Hormones

151. The repressor of the operon is synthesized :
(1) All the time (2) Certain time
(3) Non constitutively (4) None of these

152. In this given pedigree what is the mode of inheritance
(1) Autosomal dominant
(2) Autosomal recessive
(3) X-linked dominant
(4) X-linked recessive

153. Read the following sentences.
(a) In elution the separated bands of DNA are cut out from agarose gel and extracted from the gel piece
(b) E.coli cloning vector pBR322 have several restriction sites, ori, antibiotic resistance genes and RoP.
(c) The downstream processing and quality control testing vary from product to product.
(d) Competent bacterial cells take up the plasmid.
(1) All are incorrect
(2) Except d, all are correct
(3) Only d is correct
(4) All are correct
154. First transgenic plant is :-
   (1) Potato          (2) Tomato
   (3) Tobacco         (4) Maize

155. Which of the following bacteria was associated with discovery of penicillin?
   (1) Propionibacterium
   (2) Trichoderma
   (3) Streptococcus
   (4) Staphylococcus

156. RNAi results in :-
   (1) Silencing of mRNA translation
   (2) Silencing of a specific mRNA due to complementary dsRNA molecule
   (3) Silencing of mRNA transcription
   (4) Silencing of DNA for mRNA transcription.

157. When we look at stars on a clear night sky, we apparently are peeping into the past, because :-
   (1) We can know about our past by seeing these stars.
   (2) When we see objects in our immediate surroundings we see them in present time.
   (3) Light emitted by these stars took thousands or millions of years to reach upto our eyes.
   (4) We can see them in real time but it happens occasionally.

158. Mark the incorrect statement about the first non-cellular form of life ?
   (1) Originated about 3 billion years back
   (2) It was a cluster of nucleoprotein surrounded by lipid coat
   (3) They would have been giant molecules and the first living giant molecules was probably a RNA
   (4) These capsules have molecules with no ability of self replication.

159. According to Darwin, The process of evolution is:-
   (1) Continuous
   (2) Discontinuous and sudden
   (3) Slow and gradual
   (4) Both 1 and 3

154. प्रथम मट्टा 1ं स्कन्धनिकय पद्धति
   (1) अरुंधति (2) टमाटर
   (3) ताक मट्टा (4) मनवा

155. निम्न निर्देशित में से कौन नया जैविक पौधा नीली छिल्ली की खेती में सब रंग दिखता है :-?
   (1) प्यूं फिलोनी बटोर टोलियम
   (2) टूं 1केभ्ल्ड रूप
   (3) रूंटर ् प्टर के कस
   (4) रूंटर फिलोनी के कस

156. RNAi का परिणाम म निम्न में -
   (1) mRNA अनु ् वारकता के साथ तक देना
   (2) संपूर्ण रक्षावस्था के कारण स्पष्टकर्म का सांदर्भ नहीं होता।
   (3) mRNA के अनुसार लेखन का सांदर्भ नहीं होता।
   (4) mRNA में रसोई ज म डेस्न का सांदर्भ नहीं होता।

157. जब हम में से आकाश में ग्रहों की तरफ देखते हैं, तो वे में देखते हैं भौम देखते हैं।
   (1) इन तरफ देखते हैं जहां हम अंतरिक्ष में देखते हैं।
   (2) जब हम अंतरिक्ष में और वर्तमान देखते हैं तो वे में देखते हैं।
   (3) तरफ देखते हैं जिनका प्राकृतिक रूप वास्तव में देखते हैं।
   (4) हम तरफ देखते हैं जिनका में ् भारी देखते हैं लेकिन कम जो ् कार होता है।

158. वैज्ञानिक के प्रथा म अक्षय विज्ञान के संस्थान के नीचे कौन चुर नियाम?
   (1) लाग्बैं फिलिफार बनाएं तूं उत्तर दे ता है।
   (2) के फर्तु बनाएं विलास देखते हैं जिसके किन्हीं ने दिखा दे जाह।
   (3) में तुः तैल नेक लामें देखते हैं जो पूं दिखाने के में हैं।
   (4) इन के पूरे में देखते हैं जिन्होंने देखते हैं रेव प्राप्त विज्ञान की शमता अनु परिलक्षण तत्व है।

159. डायरिन के अनुसार उसका किया कस्बे अनुप्रयोग है?
   (1) स्तल
   (2) अखंड ् वायु नक
   (3) दौनी ् अभ्यासक
   (4) रा 3 दो नात
160. Identify the correct match from the columns I, II and III.

<table>
<thead>
<tr>
<th>Column-I</th>
<th>Column-II</th>
<th>Column-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Proliferative phase</td>
<td>(a) 14th day</td>
<td>(i) Formation of corpus luteum</td>
</tr>
<tr>
<td>(B) Secretory phase</td>
<td>(b) 1st-4th day</td>
<td>(ii) Development of Graafian follicle</td>
</tr>
<tr>
<td>(C) Bleeding</td>
<td>(c) 15th-28th day</td>
<td>(iii) Shedding of stratum functionale</td>
</tr>
<tr>
<td>(D) Ovulatory phase</td>
<td>(d) 5th-13th day</td>
<td>(iv) Release of secondary oocyte</td>
</tr>
</tbody>
</table>

(1) A → d → iii; B → c → i, C → b → iv, D → a → ii
(2) A → c → ii; B → b → iii, C → a → i, D → d → iv
(3) A → d → ii; B → c → i, C → b → iii, D → a → iv
(4) A → d → iii; B → b → iv, C → a → ii, D → c → i

161. Read the statement A–D :-

(A) Great reduction in population rate achieved with RCH programmes.
(B) From year 1900 to year 2000, world population grown from 2 million to 6 million
(C) Increase in number of people in reproducible age is one of the cause of sharp rise of population in India.
(D) India was amongst the first country to introduce 'family planning' programmes in 1971

How many of the above statements are not incorrect?
(1) 2  (2) 1  (3) 4  (4) 3
162. Arrange following events during process of fertilization in a proper sequence and choose the correct option accordingly:
(i) Acrosin released
(ii) Penetration of corona radiata by hyaluronidase
(iii) Fusion of sperm with plasma membrane
(iv) Binding of sperm to zona pellucida
(v) Completion of IIInd meiosis of secondary oocyte
(vi) Cortical reaction
(vii) Completion of fertilization
(1) (ii), (iv), (i), (iii), (v), (vi), (vii)
(2) (iii), (ii), (iv), (i), (v), (vi), (vii)
(3) (i), (iii), (ii), (v), (vi), (iv), (vii)
(4) (iii), (iv), (ii), (i), (vii), (v), (vi)

164. Time

Which one is correct according to above graph?
(1) B = –ve acceleration phase, A = Lag phase
(2) B = Positive acceleration phase, E = asymptote phase
(3) B = Exponential phase, E = Stationary phase
(4) D = Positive acceleration phase; B = deacceleration phase

165. Select the correct match:-
(1) Earth Summit - 1997
(2) Kyoto Protocol - 2002
(3) World Summit - 1992
(4) Montreal Protocol - 1987
166. Natural & human induced disturbances, can convert a particular seral stage of succession to an earlier stage it is called as :-
(1) Primary succession
(2) Secondary succession
(3) Progressive succession
(4) Retrogressive succession

167. Tree → insects → small bird → large birds
In this food chain energy flow will be :-
(1) Decreasing at successive trophic level
(2) Increasing at successive trophic level
(3) First decreasing then increases
(4) First increases then decreases

168. Which one is correct?
(a) Inter specific competition – Maintain species diversity
(b) Intra specific competition – Maintain equilibrium between species
(c) Intra specific competition – Maintain equilibrium in population
(d) Inter specific competition – Induced diversity loss

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

169. Solar energy converted to chemical energy by plant and chemical energy get converted into kinetic or heat energy in animals, it shows :-
(1) 1st law of thermodynamic in food chain
(2) 2nd law of thermodynamic in food chain
(3) Above both laws in food chain
(4) Above statement is not related with law of thermodynamic

170. Above graph shows :-
(1) Allens rule
(2) Libing law of minimum
(3) Shelford law of tolerance
(4) Bergman rule
171. How many statement are correct?
(a) Parameters such as pH, Minerals composition and topography determine to a large extent the vegetation in any area.
(b) The productivity and distribution of plant is also heavily dependent on water
(c) For many animals, light is important as cues for timing their foraging, reproductive and migratory activities
(d) If the stressful external conditions are localised or remain only for a short duration the organism has two other alternative first is regulate and second is migrate

(1) a, b are correct
(2) a, b, c are correct
(3) b, c, d are correct
(4) all are correct

172. In laboratory experiments, two species of the protist *Paramecium* (species 1 and 2) were grown alone and in the presence of the other species. The following graphs show growth of species 1 and 2, both alone and when in mixed culture with the other species.

Which of the following conclusions can be drawn from the graphs?
(1) Competitive exclusion occurred in these experiments.
(2) Both species are affected by interspecific competition but species 1 is affected less.
(3) Both species are affected by interspecific competition but species 2 is affected less.
(4) Both species are affected equally by interspecific competition
173. Producer Pri. Sec. Top
(I) Plant → Insect → Frog → Eagle
(II) Plant → Rat → Snake → Peacock
When food chain I will connected with food chain-II and snake eats frogs than snake is :-
(1) Primary consumer
(2) Secondary consumer
(3) Tertiary consumer
(4) Top consumer

174. Which of the following is incorrectly matched :-

<table>
<thead>
<tr>
<th>Disease</th>
<th>Pathogen</th>
<th>Microbe type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonia</td>
<td>Haemophilus influenza</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Typhoid</td>
<td>Salmonella</td>
<td>Bacteria</td>
</tr>
<tr>
<td>Filarisis</td>
<td>Microsporum</td>
<td>Worm</td>
</tr>
<tr>
<td>Amoebiasis</td>
<td>E.histolytica</td>
<td>Protozoa</td>
</tr>
</tbody>
</table>

175. Grafts from just any source-an animal, another primate or any human being cannot be made since the grafts would be rejected by:-
(1) B-cells
(2) Cytotoxic T-cells
(3) Helper T-cells
(4) Suppressor T-cells

176. Which is necessary for achieving good health?
(a) Awareness about diseases
(b) Proper disposal of waste
(c) Control of vectors
(d) Maintenance of hygienic food and water
(1) a only
(2) a and c only
(3) b and c only
(4) a, b, c, d

177. Select the correct statement with respect to diseases and immunisation:
(1) Injection of snake antivenom against snake bite is an example of active immunisation.
(2) If due to some reason B-and T-lymphocytes are damaged, the body will not produce antibodies against a pathogen.
(3) Injection of dead/inactivated pathogens causes passive immunity
(4) Certain protozoans have been used to mass produce hepatitis B vaccine

173. (I) पदप → बीट → में भु-भू चील
(II) पदप → चूंह अगर चांचे अगर चांचे में जिहों जिहों ताली से पढ़के बी. अगर ते ते पड़ होगा
(1) प्रारंभिक उपचार व त
(2) द्वितीय चरण व त
(3) तृतीय का उपचार व त
(4) चूंह उपचार व त

174. निम्न में से कौन सा गलत है:-

| रोग | रोग बाहक | सूक्ष्म पुष्पकरण | सार
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) यू यू मो मो निहित है। दिन-पहले एर एर होगा</td>
<td>लेवा पुष्पकरण</td>
<td>लेवा पुष्पकरण</td>
<td></td>
</tr>
<tr>
<td>(2) टैंटैंटैं टैंटैं में लेवा पुष्पकरण</td>
<td>लेवा पुष्पकरण</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) फाइलिंग रोग बाहक</td>
<td>सारस्य रोग कृपिया</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) अन्य क्वत</td>
<td>E. histolytica लेवा पुष्पकरण</td>
<td>लेवा पुष्पकरण</td>
<td></td>
</tr>
</tbody>
</table>

175. किसी भाँति से जीव, अयोग्य हो या जीव ना लिया गया या पट बना या नहीं जाता है, ग्या पट का बीत किसी हो ते है,
(1) B-के निहित है। (2) C-टैंटैंटैं निहित है।
(3) सा का से निहित है।
(4) C-टैंटैंटैं निहित है।

176. अक्षम रेखा रेखा चौधरी ने है तु अजबसक है
(1) ये गे के ब्लूटे में जगहत
(2) अपने फ्लैट ता सारस्य निहितन
(3) ये गे गे ब्रह्म के निहितन
(4) ब्लूटे ज्ञान जान से नगदे ना ना सट रख चंद र्चंद ब्रह्म वाल
(1) a के वल
(2) a के वल
The correct answer is (1) a के वल.

177. रोग गे गे - रोग बाहक के संबंध में निम्नलिखित फक्त न कही है?
(1) ये पद्धति ब्लैन्क के प्रति - एंड टैंटैंटैं नमक इंदिर- ज्ञान नियामक रोग के बाहर ता है।
(2) पूवे निहित के राग नीचे-ली-ली बा पुष्पकरण शिक्षण ताली है, तले जी रंग के ब्लैन्क निहित है।
(3) यु. तला निपिंग मूलक तला ज्ञान इंद्र ने उपचार निपिंग रोग के नहीं।
(4) भु-भू ताला या एंड टैंटैंटैं नमक इंदिर जला ताला ताला या एंड टैंटैंटैं नमक इंदिर जला ताला ताला नहीं।
178. Suitable explant for raising virus free plant is/are :-  
(1) Apical meristem only  
(2) Axillary meristem only  
(3) Both apical and axillary meristem  
(4) Root meristem only

179. Donor Wheat variety, having a high protein content is :-  
(1) Atlas - 66  
(2) Kalyan sona  
(3) Sharbati sonara  
(4) Pusa Lerma

180. Hisardale is an example of ?  
(1) Out Crossing between bikaneri and murrah  
(2) In breeding  
(3) Interspecific hybridisation  
(4) Cross breed between bikaneri and merino

Your moral duty is to prove that ALLEN is ALLEN

Your Target is to secure Good Rank in NEET-II 2016