1. (2)  
\[ S \]

2. (3)  
\( e \), According to tangent law  
\[ B_A = B_0 \tan \theta \]

or  
\[ \frac{\mu_0 2M}{4\pi d_1} = \frac{\mu_0 M}{4\pi d_1} \tan \theta \]

\[ \therefore \frac{d_1}{d_2} = (2 \cot \theta)^{1/3} \]

3. (1)  
\[ T = 2\pi \sqrt{\frac{I}{MB}} = 2\pi \sqrt{\frac{m \ell^2}{12 \times m_p / B}} = 4 \text{ sec} \]

\[ T' = 2\pi \sqrt{\frac{m \ell^2}{12 \times m_p / 2}} = 4 \text{ sec} \]

4. (3)

5. (4)  
The induced emf is obtained by considering a strip on the disc fig. Then, the linear speed of a small element dr at a distance r from the centre is \( v = \omega r \). The induced emf across the ends of the small element is:

\[ de = B(\omega r) dr \]

Thus, the induced emf across the inner and outer sides of the disc is:

\[ e = \int_{a}^{b} B \omega r \, dr = \frac{1}{2} B \omega (b^2 - a^2) \]

6. (4)  
(d). \( L_2 \) and \( L_3 \) are in parallel. Thus their combination gives

\[ L' = \frac{L_2 L_3}{L_2 + L_3} = 0.25 \text{ H} \]

The \( L' \) and \( L_4 \) are in series, thus the equivalent inductance is:

\[ L = L_4 + L' = 0.75 + 0.25 = 1 \text{ H} \]
7. **(1)**

(a) 'Immediately' after pressing the switch S, the current in the coil $L$, due to its self-induction will be zero, that is $i_2 = 0$. The current will only be found in the resistance $R_1$ and this will be the total current in the circuit.

$$i = i_1 = \frac{E}{R_2} = \frac{10 \text{ volt}}{5.0 \text{ volt}} = 2.0 \text{ ampere}.$$  

8. **(1)**

$$\tan \phi = \frac{X_C - X_L}{R} \Rightarrow \tan 45^\circ = \frac{1}{2\pi f(2\pi fL + R)}$$

9. **(2)**

$$R = X_L = 2X_C$$

$$Z = \sqrt{R^2 + (X_L - X_C)^2} = \sqrt{4X_C^2 + X_C^2} = \sqrt{5X_C^2} = \frac{\sqrt{5}R}{2}$$

$$\tan \phi = \frac{X_L - X_C}{R} = \frac{2X_C - X_C}{2X_C}$$

$$\tan \phi = \frac{1}{2} \quad ; \quad \phi = \tan^{-1} \left( \frac{1}{2} \right)$$

10. **(4)**

The voltage $V_L$ and $V_C$ are equal and opposite so voltmeter reading will be zero.

Also $R = 30 \Omega$, $X_L = X_C = 25 \Omega$

So $I = \frac{V}{\sqrt{R^2 + (X_L - X_C)^2}} = \frac{V}{R} = \frac{240}{30} = 8 \text{A}$

11. **(3)**

$$i_{rms} = \sqrt{\frac{i_1^2 + i_2^2}{2}} = \frac{1}{\sqrt{2}}(i_1^2 + i_2^2)^{1/2}$$
12. Electric field between the plates of the capacitor is given by

\[ E = \frac{\sigma}{\epsilon_0} \quad \text{or} \quad \frac{q}{A \epsilon_0} \]

Flux through the area considered

\[ \phi = \frac{q}{A \epsilon_0} \times \frac{A}{4} = \frac{q}{4 \epsilon_0} \]

Displacement current \( i_d = \epsilon_0 \frac{d\phi}{dt} \)

\[ = \epsilon_0 \frac{d}{dt} \left( \frac{q}{4 \epsilon_0} \right) = \frac{i}{4} \]

13. Since the direction of propagation of EM wave is given by \( E \times B \)

\[ \Rightarrow \left( \hat{j} \times \hat{i} = -\hat{k} \right) \]

14. \( h \nu - W_0 = \frac{1}{2} m v_{\text{max}}^2 \Rightarrow \frac{hc}{\lambda} - \frac{hc}{\lambda_0} = \frac{1}{2} m v_{\text{max}}^2 \)

\[ \Rightarrow \frac{hc}{\lambda} \left( \frac{1}{\lambda} - \frac{1}{\lambda_0} \right) = \frac{1}{2} m v_{\text{max}}^2 \Rightarrow v_{\text{max}} = \sqrt{\frac{2h \nu}{m} \left( \frac{\lambda_0}{\lambda} - 1 \right)} \]

When wavelength is \( \lambda \) and velocity is \( v \), then

\[ v = \sqrt{\frac{2h \nu}{m} \left( \frac{\lambda_0}{\lambda} - 1 \right)} \quad \ldots (i) \]

When wavelength is \( \frac{3\lambda}{4} \) and velocity is \( v' \) then

\[ v' = \sqrt{\frac{2hc}{m} \left[ \frac{\lambda_0 - \left( \frac{3\lambda}{4} \right)}{\lambda_0 \times \lambda} \right]} \quad \ldots (ii) \]

Divide equation (ii) by (i), we get

\[ \frac{v'}{v} = \sqrt{\frac{3}{4} \frac{\lambda_0}{\lambda}} \]

\[ v' = v \left( \frac{4}{3} \right)^{1/2} \sqrt{\frac{\lambda_0 - \left( \frac{3\lambda}{4} \right)}{\lambda_0 \lambda}} \]

\[ i.e. \quad v' > v \left( \frac{4}{3} \right)^{1/2} \]
15. (1)
The stopping potential for curves a and b is same.
\[ f_a = f_b \]
Also saturation current is proportional to intensity
\[ I_a < I_b \]

16. (4)
Radius \[ R = \frac{\varepsilon_0 a^2 h^2}{\pi n Z e^2} \]
Velocity \[ v = \frac{Ze^2}{2\varepsilon_0 n h} \] and energy \[ E = -\frac{m Z^2 e^4}{8\varepsilon_0 n^2 h^2} \]
Now, it is clear from above expressions \[ R, v \propto n \]

17. (2)
\[ \frac{1}{\lambda} = R \left[ \frac{1}{n_1^2} - \frac{1}{n_2^2} \right] \Rightarrow \frac{1}{\lambda_{3 \rightarrow 2}} = R \left[ \frac{1}{(2)^2} - \frac{1}{(3)^2} \right] = \frac{5R}{36} \]
and \[ \frac{1}{\lambda_{4 \rightarrow 2}} = R \left[ \frac{1}{(2)^2} - \frac{1}{(4)^2} \right] = \frac{3R}{16} \]
\[ \therefore \frac{\lambda_{4 \rightarrow 2}}{\lambda_{3 \rightarrow 2}} = \frac{20}{27} \Rightarrow \lambda_{4 \rightarrow 2} = \frac{20}{27} \lambda_0 \]

18. (4)
\[ N(t) = N_0 e^{\lambda t} \]
\[ \frac{N_0}{2} = N_0 e^{\lambda t_1} \Rightarrow \lambda t_1 = \ln 2 \]
\[ \Rightarrow t_1 = \frac{\ln 2}{\lambda} = \frac{\ln 2}{\ln 2} = T \frac{\ln 2}{\ln 2} \ldots \ldots (1) \]
\[ \Rightarrow t_2 = T \frac{\ln 10}{\ln 2} \ldots \ldots (2) \]
\[ (t_2 - t_1) = T \left( \frac{\ln 10}{\ln 2} - \ln 2 \right) \]
\[ = T \left( \frac{\ln 5}{\ln 2} \right) \]

19. (1)
Potential energy \[ U = eV = eV_0 \ln \left( \frac{r}{r_0} \right) \]
Force \[ F = -\frac{dU}{dr} = \frac{eV_0}{r} \]
This force will provide the necessary centripetal force. Hence \[ \frac{mv^2}{r} = \frac{eV_0}{r} \]
\[ v = \sqrt{\frac{eV_0}{m}} \]
And \( mv = \frac{nh}{2\pi} \Rightarrow r = \frac{nh}{2\pi m v} \)

\[ r = \frac{nh \sqrt{m}}{2\pi m e V_0} \]

\( r \propto n \)

20. (4)

21. (3)

22. (2)

Suppose the amplitude of the light wave coming from the narrower slit is \( A \) and that coming from the wider slit is \( 2A \). The maximum intensity occurs at a place where constructive interference takes place. Then the resultant amplitude is the sum of the individual amplitudes.

Thus,

\[ A_{\text{max}} = 2A + A = 3A \]

The minimum intensity occurs at a place where destructive interference takes place. The resultant amplitude is then difference of the individual amplitudes.

Thus, \( A_{\text{min}} = 2A - A = A \).

\[ \therefore \frac{l_{\text{max}}}{l_{\text{min}}} = \left(\frac{A_{\text{max}}}{A_{\text{min}}}\right)^2 = \left(\frac{3A}{A}\right)^2 = 9 \]

23. (2)

\[ \Delta x = 2\lambda \]

So there are five maxima.

These are for \( \Delta x = 0, \pm \lambda, \pm 2\lambda \).

24. (3)

The nearest white spot will be at \( P \), the central maxima.

\[ \therefore y = \frac{2d}{3} - \frac{d}{2} = \frac{d}{6} \]

25. (3)

Using, \( \frac{\mu - 1}{\nu} = \frac{\mu - 1}{R} \)

or \[ \frac{2 - 1}{\nu} = \frac{2 - 1}{R} \]

\( \therefore \nu = 2R \)
26. (2)
\[ u = -50 \text{ cm} = -0.5 \text{ m} \]
\[ v = -30 \text{ cm} = -0.3 \text{ m} \]
\[ P = \frac{1}{f} = \frac{1}{v} = \frac{1}{u} = \frac{1}{0.3} + \frac{1}{0.5} = \frac{-0.2}{0.15} = -1.33 \text{ D} \]

27. (2)
Answer (2)
1 material is giving two products
Let initial number be \( N_0 \)
Let time when \( \frac{3}{4} N_0 \) decay be \( t \)
Effective half life = \( \frac{T_1 T_2}{T_1 + T_2} = 12 \text{ years} \)
\[ \frac{N}{N_0} = \left( \frac{1}{2} \right)^n \]
\[ \frac{1}{4} = \left( \frac{1}{2} \right)^n \quad n = 2 \]
Hence, time will be 24 years

28. (1)
\[ 2R_h = R_e \]
\[ 2\lambda N_1 = \lambda_2 N_2 \]
Radio-activity is same after say time \( t \)
\[ \lambda_1 N_1 e^{-\lambda_1 t} = \lambda_2 N_2 e^{-\lambda_2 t} \]
Dividing (i) by (ii)
\[ 2e^{\lambda_1 t} = e^{\lambda_2 t} \]
\[ 2 = e^{(\lambda_2 - \lambda_1) t} \]
Taking \( \ln \) on both sides
\[ 0.693 = (\lambda_2 - \lambda_1) t \]
\[ t = \left( \frac{1}{T_2 - T_1} \right) \ln \left( \frac{T_2}{T_1} \right) \]
\[ \frac{T_2 T_1}{T_1 - T_2} = t \]
29. (2) 

From Einstein photoelectric equation,

\[ h\nu = \phi + K_{\text{max}} \]

\[ \frac{hc}{\lambda} = \phi + e\nu_0 \quad (\nu_0 = \text{stopping potential}) \]

\[ \frac{hc}{\lambda} = \phi + e\lambda \]

\[ \frac{hc}{2\lambda} = \phi + e\frac{\lambda}{3} \]

On solving

(work function) \( \phi = \frac{hc}{4\lambda} \)

\[ \frac{hc}{\lambda_0} = \frac{hc}{4\lambda} \]

\[ \lambda = 4\lambda. \]

30. (3)

\[ \sqrt{f} \propto (Z - 1) \]

or \[ f \propto (Z - 1)^2 \]

\[ \lambda = \frac{hc}{(Z - 1)^2} \]

\[ \frac{\lambda_1}{\lambda_2} = \frac{(Z_2 - 1)^2}{(Z_1 - 1)^2} \]

\[ \frac{\lambda_1}{\lambda_2} = \left(\frac{28}{42}\right)^2 \]

\[ \frac{\lambda_1}{\lambda_2} = \left(\frac{2}{3}\right)^2 \]

\[ \frac{\lambda_1}{\lambda_2} = \frac{4}{9} \]

\[ \lambda_2 = \frac{9}{4}\lambda_1 \]

31. (1)

Intensity of the bulb remains the same because source is DC, so steady state current will be

\[ I_{\text{steady}} = \frac{E_{\text{source}}}{R_{\text{bulb}}} \]
32. (4)

Initial energy = total energy = \( \frac{Q^2}{2C} = U \)

\[ U' = \frac{Q^2}{4(2C)} \left( \text{as } Q' = \frac{Q}{2} \right) \]

\[ = \frac{Q^2}{8C} \]

\[ U_{\text{inductor}} = U_{\text{total}} - U_{\text{capacitor}} \]

\[ = \frac{Q^2}{2C} - \frac{Q^2}{8C} \]

\[ = \frac{3Q^2}{8C} = \frac{3}{4} U \]

33. (1)

34. (1)

\[ m r o^2 = \frac{1}{4\pi\varepsilon_0} \frac{q_1 q_2}{r^2} \]

\[ m r \frac{4\pi^2}{T^2} = \frac{1}{4\pi\varepsilon_0} \frac{q_1 q_2}{r^2} \]

\[ T^2 = \left( 4\pi^2 m r \right) \left( \frac{4\pi\varepsilon_0 r^2}{q_1 q_2} \right) \]

\[ T^2 = \frac{16\pi^3 \varepsilon_0 m r^3}{q_1 q_2} \]

\[ T = \sqrt{\frac{16\pi^3 \varepsilon_0 m r^3}{q_1 q_2}} \]

35. (2)

\[ V_A = \frac{kq}{r} + \frac{k(-q)}{d-r} \]

\[ V_B = -\frac{kq}{r} + \frac{kq}{d-r} \]

\[ V = V_A - V_B = \frac{2kq}{r} - \frac{2kq}{d-r} = \frac{2q}{4\pi \varepsilon_0} \left[ \frac{1}{r} - \frac{1}{d-r} \right] \]

\[ V = \frac{q}{2\pi \varepsilon_0} \left( \frac{d-2r}{(d-r)} \right) \]

\[ d \gg r \]

\[ V = \frac{q}{2\pi \varepsilon_0} \]
36. (1)

\[ q_{\text{max}} = 1000 \mu\text{C}, 2000 \mu\text{C}, 2500 \mu\text{C} \]

\[ q = 1000 \mu\text{C}, 1000 \mu\text{C}, 1000 \mu\text{C} \]

\[ V = 50 \text{ V}, 25 \text{ V}, 20 \text{ V} \]

\[ V_{\text{net}} = 50 + 20 + 25 \]

\[ V_{\text{net}} = 95 \text{ V} \]

37. (2)

As net resistance increases, so current decreases, so bulb B₁ gets dimmer.

38. (1)

\[ \Rightarrow l(dl)B = 2T \sin \theta \]

\[ l(dl)B = 2T \theta \]

\[ l(R(2a)B) = 2T \theta \]

\[ T = BIR \]

39. (3)

For regular polygon having \( n \) sides where \( n \rightarrow \infty \) will be almost a circle.

So \( B = \frac{\mu I}{2R} \)

40. (4)

Mass of \( \frac{L}{3} \) part will be \( \frac{M}{3} \)

Centre of mass of \( \frac{L}{3} \) part is \( \frac{L}{6} \) below the table

So total displacement of C.M. to bring it on the table

\[ W = M \frac{g}{3} \left( \frac{L}{6} \right) - \frac{MgL}{18} \]

41. (1)

\[ y = \frac{4}{3x^2 + 48t^2 + 24xt + 2} \]

We need to convert in the form \( f(kx \pm \omega t) \)

\[ y = \frac{4}{3(x^2 + 16t^2 + 8xt) + 2} \]

\[ = \frac{4}{3(x + 4t)^2 + 2} \]

\[ v = \frac{\omega}{k} = \frac{4}{1} = 4 \text{ m/s} \]
42. \( N \cos (90^\circ - \theta) = \frac{mv^2}{r} \)

\( N \sin (90^\circ - \theta) = mg \)

\( N = \frac{mg}{\cos \theta} \)

and \( N \sin \theta = \frac{mv^2}{r} \)

Dividing (ii) and (i)

\( mg \tan \theta = \frac{mv^2}{r} \)

\( g \left( \frac{h}{r} \right) = \frac{v^2}{r} \Rightarrow v = \sqrt{gh} \)

43. \( T' = \frac{T}{\sqrt{1 - \frac{\rho_{\text{liq}}}{\rho_{\text{bob}}}}} \)

44. \( w = w - m\omega^2 R \)

\( \Rightarrow mg_w = mg - m\omega^2 R \)

\( mg_w = \frac{3}{5} mg \)

\( \Rightarrow m\omega^2 R = \frac{2}{5} mg \)

\( \Rightarrow \omega = \sqrt{\frac{2g}{5R}} \)

45. \( V_{\text{top}} = nV_{\text{bottom}} \)

Depth of the lake is \( h = (n-1)H \), here \( H \) is atmospheric pressure height = 10 m of water

\( h = (2-1)(10 \text{ m}) = 10 \text{ m} \)

46. (1)
47. (4)
48. (3)
49. (4)
50. (2)
51. (2)
52. (1)
53. (3)
54. (3)
See physical preparation of acids
55. (2)
Factual questions
56. (1)
\[2\text{CH}_3\text{COOH} \xrightarrow{\text{Ca(OH)}_2} \text{CH}_3\text{COOH} + \text{Ca}^2+ \xrightarrow{\Delta} \text{CaCO}_3 + \text{CH}_3\text{COCH}_3\]
57. (4)
Alcohols and phenols can be distinguished by NaOH and FeCl₃ solution (b) Phenol and acid can be distinguished by NaHCO₃.
58. (1)
This can be explained on the basis of basicity of leaving group in each case. For acid chlorides, leaving group is Cl⁻ ions and for esters, leaving group is alkoxide. However, in amide, leaving group is NH₂ or amine. Out of these three, Cl⁻ ion is weakest base hence acid chlorides are most reactive. But, NH₂ or amines are strongest bases, hence amides are least reactive.
59. (3)
Claisen condensation
\[\text{H}_3\text{C} - \text{C}^+\text{O} - \text{C}_2\text{H}_5 + \text{H}_2\text{CH}_2 - \text{C} - \text{OC}_2\text{H}_5\]
Ethyl acetate
\[\text{C}_2\text{H}_3\text{ONa} + \text{C}_2\text{H}_5\text{OH} \rightarrow \text{CH}_3\text{C} - \text{CH}_2 - \text{C} - \text{OC}_2\text{H}_5,\]
Acetoacetic ester (Ethyl acetoacetate)
60. (2) Perkin's reaction

\[
\begin{align*}
\text{CH}_2=\text{O} & \quad \text{H}_2\text{C}-\text{CH}\text{C} & \\
\text{CH}_3\text{C} & \\
\text{CH}_3\text{COONa} & \\
\text{H}_2\text{O} & \\
\text{CH} & =\text{CH}-\text{C}-\text{O}-\text{C}-\text{CH}_3
\end{align*}
\]

\[
\begin{align*}
\text{H}_2\text{O}/\text{H}^+ & \\
\text{-CH}_3\text{COOH} & \\
\text{Cinnamic acid}
\end{align*}
\]

61. (1) Tischenko reaction is

\[
\begin{align*}
2\text{CH}_3\text{CHO} & + \text{H}_2\text{O} \xrightarrow{\text{(C}_2\text{H}_5\text{O)}_3\text{Al}} \\
\text{Acetaldehyde} & \\
[\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH}] & \xrightarrow{-\text{H}_2\text{O}} \\
\text{CH}_3\text{COOC}_2\text{H}_5 & \\
\text{Ethyl acetate}
\end{align*}
\]

62. (3) KMnO\text{4} + KOH (hot) converts CH\text{3} to COOH.
HI reduces - COOH to -CH\text{3}.

63. (1) According to Blanck's rule

\[
\begin{align*}
\text{CH}_2\text{COO} & \quad \text{Ca} & \quad \text{CH}_2\text{C} \quad \text{O} + \text{CaCO}_3 \\
\text{CH}_3\text{COO} & \\
\text{Calcium salt of butane-1,4-dicarboxylic acid} & \\
\Delta & \\
\text{Sucinic anhydride}
\end{align*}
\]
64. (2)\[ \text{CH}_3\text{NH.COCH}_3 \text{ will not give Hoffmann's hypobromite reaction.} \]

65. (3)\[ \text{CH}_3\text{O-}[\begin{array}{c} \text{O} \\ \text{COOH} \end{array}] \]
\[4\text{-Methoxycarbonylbenzoic acid}\]

66. (3)\[ \text{CH}_3\text{Cl} \xrightarrow{\text{Mg, ether}} \text{CH}_3\text{MgCl} \]
\[\text{CH}_2\text{COCl} \xrightarrow{\text{ether}} (\text{CH}_3)_2\text{COH} \]
\[\text{Tertiary butyl alcohol}\]

67. (3) Iodoform test is shown by alcohols of the general formula \( \text{R-C-H}_3 \) and carbonyl compounds of the general formula \( \text{R-C-C-H}_3 \).

68. (3)\[ \text{NH}_2 \]
\[\text{HNO}_2 \xrightarrow{273 \text{ K}} (\text{NaNO}_2 + \text{HCl}) \]
\[\text{(X)} \xrightarrow{\text{H}_3\text{PO}_2 \text{Cu}^+} \]

69. (2) o-Acetylsalicylic acid is an analgesic.

70. (3) Aniline yellow is a basic dye.

71. (1) Sucrose does not show mutarotation because there is hemiacetal group in it.

72. (4) See isoelectric point of \( \alpha \)-amino acids.
73. (3) \[ CH_3CONH_2 + Br_2 + NaOH \rightarrow CH_3NH_2 \]

74. (1) -OCH_3 is electro-releasing group, it enhances the basicity. -NO_2 is electron-attracting group, it decreases the basicity.

75. (3) The general formula of most of the carbohydrates can be written as C_nH_2nO_n. The formula of glycerol is C_3H_8O_3.

76. (1) \( \alpha \)-Glucose (Starch) is readily digested by human beings but a polymer of \( \beta \)-glucose (cellulose) is not digestable.

77. (3) Aniline is identified by carbylamine reaction. \( RNH_2 + CHCl_3 + 3KOH \rightarrow R - NC + 3KCl + 3H_2O. \)

78. (2) Hinsberg reagent is benzenesulphonyl chloride (C_6H_5SO_2Cl).

79. (1) The equilibrium constant for the hydration of H_2CO is greater than that of (CH_3)_2CO. Two factors responsible for this trend are steric and inductive. Firstly, the addition of H_2O involves the change in the hybridization of C from sp^3 to sp^3. The alkyl groups in (CH_3)_2CO will involve more steric hinderance and thus its hydration will be less effective than that of H_2CO. Secondly, the methyl group is an electron-releasing group. The presence of two methyl groups attached to C of CO group in (CH_3)_2CO diminishes the positive charge on C causing the decrease in the reactivity of nucleophilic addition of H_2O across \( C \equiv O. \)

80. (2) 2-Pentanone contains CH_3CO- group. It will show iodoform test.

81. (4) The chrome alum involves 24 water of crystallization.

82. (2)

83. (3)

84. (3)

85. (3) The reaction of halogens (except F_2) with hot and concentrated alkali is

\[ 3X_2 + 6OH^- \overset{\text{hot}}{\underset{\text{conc.}}{\rightarrow}} 3H_2O + 5X^- + XO_3^- \]

86. (2)

87. (4)

88. (3)
89. (1)
90. (2)
91. NCERT PG-226 –M (organism & Population)
92. NCERT PG- 255-M (Ecosystem)
93. NCERT PG- 259 –M (Biodiversity & its Conservation)
94. NCERT PG- 276 –E (Enviromental issue)
95. NCERT PG- 221-E (organism & Population)
96. -M- Only 10% energy is passed at each trophic level (Ecosystem)
97. NCERT PG- 259 –M (Biodiversity & its Conservation)
98. NCERT PG- 271 –E (Enviromental issue)
99. M-No net increase in population. (organism & Population)
100. NCERT PG- 253,254-E (Ecosystem)
101. NCERT PG- 260 –M (Biodiversity & its Conservation)
102. NCERT PG- 284 –E (Enviromental issue)
103. NCERT PG-236 –M (organism & Population)
104. NCERT PG- 255-E (Ecosystem)
105. NCERT PG- 260 –M (Biodiversity & its Conservation)
106. NCERT PG- 282 –E (Enviromental issue)
107. NCERT PG- 225-M (organism & Population)
108. NCERT PG- 253-E (Ecosystem)
109. NCERT PG- 264 –E (Biodiversity & its Conservation)
110. NCERT PG- 281 –E (Enviromental issue)
111. NCERT PG-237,238, -M (organism & Population)
112. NCERT PG- 250,251-M (Ecosystem)
113. NCERT PG- 260,261 –M (Biodiversity & its Conservation)
114. NCERT PG- 276 –M (Enviromental issue)
115. NCERT PG- 226-E (organism & Population)
116. NCERT PG- 249-E (Ecosystem)
117. NCERT PG- 267 –M (Biodiversity & its Conservation)
118. NCERT PG- 271 –M (Enviromental issue)
119. -M- Death Rate= No. of death /total population
Thus, $\frac{3}{18}=0.166$ (organism & Population)
120. NCERT PG- 250-M (Ecosystem)
121. NCERT PG- 263 –E (Biodiversity & its Conservation)
122. NCERT PG- 283 –E (Enviromental issue)
123. NCERT PG-233,234 –M (organism & Population)
124. NCERT PG- 263 –M (Biodiversity & its Conservation)
125. NCERT PG- 226-M (organism & Population)
126. NCERT PG- 247-E (Ecosystem)
127. NCERT PG- 280 –E (Enviromental issue)
128. (Biodiversity & its Conservation)
129. NCERT PG- 282 –E (Enviromental issue)
130. (Molecular basis of Inheritance)
131. NCERT PG- 184 –E (Microbes in human welfare)
132. NCERT PG- 171, -E (Strategies for enhancement in food production)
135. The three stop codons were named after precious gemstones
Like
UAA - Ochre
UAG - Amber
UGA - Opal
136. isolation leads to speciation
137. DNAase shall denature the DNA hence never used
139. Plants as secondary metabolites are good sources of drugs especially flowers .Also fungi.
142. second generation vaccine means the ones produced via genetic engineering.
147. spermatogenesis needs temperature less than body temperature.
148. Menopause means stoppage of menstrual cycle.
149. Female Anopheles mosquito is the primary host for Plasmodium.
151. Industrial melanism is an example of natural selection.
156. Arber and Linn discovered 2 enzymes in bacteria that is important for genetic engineering.
157. PCR started with ssDNA shall yield dsDNA calculated a $2^{total\ number\ of\ cycles} - 1$. In this case it shall be $2^9$.
158. In insulin A chain has 21 amino acids and B chain has 30. They are connected via 2 interchain disulphide bonds.
160. Inhibin inhibits only FSH.
163. Secondary follicle has primary oocyte.
164. Alcohol inhibits ADH secretion.
166. Pregnant female secretes high level of HCG whose target is Corpus luteum.
168. Nucleases is secreted in pancreatic juices.
171. Acquired immunity is developed after birth. Acquired immunity has 2 components-humoral and cellular
172. Transgenic tomato lacks the enzyme that promotes its softening.
175. Mg ions are essential Taq polymerase enzyme to function.
177. Bowmans capsule is double layered and lumen of renal tubule is narrow.