ANSWER KEY FOR MOCK TEST- 35 (FOR 2020 ASPIRANTS) (03rd July 2020)

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1) \[ T \propto \sqrt{\frac{t}{l}} \]
\[ \frac{T_2}{T_1} = \sqrt{\frac{l_2}{l_1}} \]
\[ \frac{\Delta T}{T} \times 100\% = \left( \sqrt{\frac{l_2}{l_1}} - 1 \right) \times 100\% \]
\[ = 10\% \]

Correct option is (4)

2) In \( ^{235}\text{U} \):
- no. of protons = 92
- no. of neutrons = 235 - 92 = 143

In \( ^{16}\text{O} \):
- no. of protons = 8
- no. of neutrons = 16 - 8 = 8

In \( ^{4}\text{He} \):
- no. of protons = 2
- no. of neutrons = 2

In \( ^{56}\text{Fe} \):
- no. of protons = 26
- no. of neutrons = 30

In \( ^{235}\text{U} \), neutron-proton ratio is maximum

Correct option is (3)

3) \( f = -15 \text{ cm} \), virtual image means image is formed behind the mirror. In this case \( u \) is negative and \( v \) is positive.

\[ u = -y \quad v = +2y \]

\[ \frac{1}{f} = \frac{1}{v} + \frac{1}{u} \]
\[ \frac{1}{-15} = \frac{1}{2y} - \frac{1}{u} \]
\[ \Rightarrow u = 7.5 \text{ cm} \]

Correct option is (1)
9. Correct option is (1)
Solution:
Answer (1)

\[ F = \frac{\mu_0 i_1 i_2 L}{2\pi d} \]

\[ \frac{F'}{F} = \left( \frac{i'}{i} \right) \left( \frac{d}{d'} \right) = \left( \frac{2}{3} \right) \]

\[ F' = \frac{-2}{3} F \]

10. \[ \eta = \frac{P_{\text{out}}}{P_{\text{in}}} \]

Here \( P \) is voltage gain

11. Correct option is (1)
Solution:

\[ \eta = \frac{e}{E} \times 100 \quad \Rightarrow \quad \frac{40}{100} = \frac{e}{E} \quad \Rightarrow \quad e = 80 \, V \]

\[ l = \frac{E - e}{R} \quad \Rightarrow \quad R = 12 \, \Omega \]
Theoretical

\[ \frac{B_{\text{circular coil}}}{B_{\text{straight}}} = \frac{\mu_0 I_c}{\mu_0 I_e} \]

\[ H = \frac{I_e R}{I_c \pi} \]

14) Torque created due to weight of street light remains same in all 3 cases. It is balanced by torque created by tension in the string. So if \( T \) be the torque created by weight of lamp and \( T \) be tension in the string and \( d \) be perpendicular distance of cable from the axis then,

\[ T = T \cdot d \]

Tension will be least for largest \( d \). This is an pattern A. So pattern A is more sturdy.

15) \[ \frac{238}{92} \rightarrow \frac{234}{92} \rightarrow \frac{4}{2} \cdot He + \alpha \]

16) \[ \frac{N}{N_0} = \left( \frac{1}{2} \right)^{\frac{b}{2}} = \left( \frac{1}{2} \right)^{\frac{30}{10}} = \left( \frac{1}{2} \right)^3 = \frac{1}{8} \]

\[ N = \frac{1}{8} N_0 = 0.125 N_0 \]

17) Consider \( I_1, I_2, I_3 \) be the currents in \( R_1, R_2, R_3 \)

Now power consumed are same, so \( I_1^2 R_1 = I_2^2 R_2 = I_3^2 R_3 \) \( \rightarrow (1) \)

\( R_2, R_3 \) are parallel, so \( I_2 R_2 = I_3 R_3 \) \( \rightarrow (2) \)

Dividing \( (1) \) and \( (2) \), \( \frac{R_2}{R_1} = \frac{R_3}{R_2} \)
20. Correct option is (1)

Solution:

Given,

\[ Q = \frac{\pi Pr^4}{8\eta l} \]  
(Volume flow rate through a capillary tube of length \( l \) and radius \( r \))

Now,

\[ Q' = \frac{\pi P\left(\frac{r}{3}\right)^4}{8\eta \times 2l} \]  
(Volume flow rate through a capillary tube of length \( 2l \) and radius \( \frac{r}{3} \))

\[ Q' = \frac{\pi Pr^4}{8\eta l \times 162} \]

\[ Q' = \frac{Q}{162} \]
\[ (21) \quad -\frac{mv^2}{\lambda^2} = -\frac{k}{\lambda^2} \Rightarrow \quad mv^2 = \frac{k}{\lambda^2} \quad \therefore \quad KE = \frac{1}{2} mv^2 = \frac{k}{2\lambda^2} \]

\[ F = -\frac{du}{dh} \Rightarrow \quad U = -\int F \, dh = -\int -\frac{k}{\lambda^2} \, dh = \int \frac{k}{\lambda^2} \, dh = \frac{k}{\lambda} \]

\[ \therefore \quad T.E = K.E + U = \frac{k}{2\lambda^2} - \frac{k}{\lambda} = -\frac{k}{2\lambda} \]

\[ (22) \quad \begin{align*}
\angle 10^\circ & \quad \angle 50^\circ & \quad \angle 80^\circ \\
\angle 10^\circ & \quad \angle 50^\circ & \quad \angle 50^\circ \\
\angle 80^\circ & \quad \angle 80^\circ & \quad \angle 60^\circ
\end{align*} \]

\[ f = +30 \, \text{cm}, \quad u = -30 \, \text{cm} \]

\[ \frac{1}{f} = \frac{1}{v} + \frac{1}{u} \Rightarrow \quad \frac{1}{30} = \frac{1}{v} - \frac{1}{30} \Rightarrow \quad v = 15 \, \text{cm} \]
25) Theoretical based

\[ KE_{\text{Rolling}} = \frac{1}{2} m v^2 \left( 1 + \frac{k^2}{R^2} \right) \]

\[ KE_{\text{Disc}} = KE_{\text{Ring}} \]

\[ \frac{1}{2} m v_D^2 \left( 1 + \frac{1}{2} \right) = \frac{1}{2} m v_R^2 \left( 1 + 1 \right) \]

\[ \frac{3}{2} V_D^2 = a V_R^2 \]

\[ \frac{V_D}{V_R} = \frac{u}{3} \implies \frac{V_D}{V_R} = \frac{\sqrt{3}}{1} \]

26) As the battery is disconnected from the capacitor, the charge will not destroy, \( q' = q \)

27) \[ F = \frac{1}{u \Pi \varepsilon_0} \frac{q}{\lambda^2} = \lambda a \]

\[ \frac{1}{u \Pi \varepsilon_0} \frac{q}{\lambda^2} = \lambda a \]

\[ q = u \Pi \varepsilon_0 \lambda a^3 \]

28) Principle of potentiometer, \[ \frac{V}{L} = \left( \frac{E}{R + \lambda + R_s} \right) \left( \frac{R}{L} \right) \]

\( R \) is resistance of potentiometer wire

\( L \) is length of potentiometer wire

\( R_s \) is series resistance
31. Correct option is (2)
Solution:

\[
5 = 2\pi \sqrt{\frac{l}{M_1 + M_2}}
\]

\[
15 = 2\pi \sqrt{\frac{l}{M_1 - M_2}} \Rightarrow \frac{1}{3} = \sqrt{\frac{M_1 - M_2}{M_1 + M_2}}
\]

\[
\frac{M_1 - M_2}{M_1 + M_2} = \frac{1}{9}
\]

\[
\frac{M_1}{M_2} = \frac{10}{8} = \frac{5}{4}
\]
(32) when Iron rod is inserted in the coil, self inductance L increases.

\[ Z = \sqrt{R^2 + X_L^2} = \sqrt{R + L \omega^2} \]

\[ I = \frac{V}{Z}, \quad P = I^2 R \]

As \( L \uparrow \), \( Z \uparrow \), \( I \downarrow \), \( P \downarrow \)

(33) Theoretical band gap

(34) In hydrogen spectrum, \( \frac{1}{m} \)

\[ \lambda_{\text{max}} = \frac{n^2(n+1)^2}{R(2n+1)} \]

For Lyman series, \( n=1 \), \( \lambda_{\text{max}} = \frac{4}{3R} \)

For Balmer series, \( n=2 \), \( \lambda_{\text{max}} = \frac{36}{5R} \)

\[ \frac{\lambda_{\text{Lyman}}}{\lambda_{\text{Balmer}}} = \frac{4 \times 5R}{3R \times 36} = \frac{5}{9} \]

(35) \[ \frac{N}{N_0} = \left( \frac{1}{2} \right)^{\frac{t}{T_{1/2}}} \]

\[ \frac{1}{8} = \left( \frac{1}{2} \right)^{\frac{t}{T_{1/2}}} = \left( \frac{1}{2} \right)^3 \]

\[ \frac{t}{T_{1/2}} = 3 \quad \Rightarrow \quad t = 3 \times T_{1/2} = 60 \text{ years} \]
\[ I = I_{\text{max}} \cos^2 \left( \frac{\phi}{2} \right) \rightarrow (1) \]

\[ \phi = \frac{2\pi}{\lambda} (\Delta \lambda) \]

**Case 1:** \[ \phi = \frac{2\pi}{\lambda} (\lambda) \Rightarrow \phi = 2\pi \Rightarrow \frac{\phi}{2} = \pi \]

\[ I = I_{\text{max}} \cos^2 \pi \]

\[ I = I_{\text{max}} \]

\[ k = \frac{I}{I_{\text{max}}} \rightarrow (2) \]

**Case 2:** \[ \phi = \frac{2\pi}{\lambda} (\lambda) \Rightarrow \phi = \frac{\pi}{2} \]

\[ I = I_{\text{max}} \cos^2 \frac{\phi}{2} \]

\[ = k \cos^2 \frac{\pi}{4} \]

\[ = \frac{k}{2} \]

(37) **For microscope,** \[ m = \frac{L}{f_o} \frac{D}{f_e} \Rightarrow m \propto \frac{1}{f_0} \]

(38) **For telescope,** \[ m = \frac{f_o}{f_e} \Rightarrow m \propto f_0 \]

(38) \[ i = 2A, \quad \beta = 0, \quad e = 0 \]

\[ \lambda = \lambda_1 + \lambda_2 \]

\[ \Rightarrow \lambda_1 = \lambda \]

\[ \mu = \frac{\sin i}{\sin \lambda_1} = \frac{\sin 2A}{\sin A} = \frac{2 \sin A \cos A}{\sin A} = 2 \cos A \]

(39) \[ E = W_0 + 0.5 \text{eV} \rightarrow (1) \]

\[ 1.2E = W_0 + 0.8 \text{eV} \rightarrow (2) \]

\[ \frac{(1)}{(2)} \Rightarrow \frac{1}{1.2} = \frac{W_0 + 0.5}{W_0 + 0.8} \Rightarrow 0.2 W_0 = 0.2 \Rightarrow W_0 = 1 \text{eV} \]
\[ \lambda = \frac{h}{\sqrt{2mE}} \quad \Rightarrow \quad \lambda \propto \frac{1}{\sqrt{m}} \]

\[ \Rightarrow \quad \frac{\Delta \lambda}{\lambda} \times 100\% = \left( \frac{K_2}{K_1} - 1 \right) \times 100\% \]

\[ = \left( \frac{1}{16} - 1 \right) \times 100\% \]

\[ = -\frac{3}{4} \times 100\% \]

\[ = -75\% \]

\[ \frac{\lambda_e}{\lambda_{\text{photon}}} = \left( \frac{h}{\sqrt{2mE}} \right) = \frac{E}{c} \frac{1}{\sqrt{2mE}} = \frac{E}{c} \sqrt{\frac{E}{2m}} \]

\[ \frac{1}{2}mv^2 = \frac{1}{u^2} \left( \frac{ze}{\lambda} \right) \frac{(ze)}{\lambda} \]

\[ \lambda = \frac{Ze^2}{u^2 \epsilon_0 m v^2} \]

\[ \lambda \propto \frac{1}{m} \]

(43) coefficient de performance du réfrigérateur = \( \frac{T_0}{T_1 - T_2} = \frac{Q}{W} \)

\[ \frac{277K}{26K} = \left( \frac{600(4.2)}{W} \right) \]

\[ W = \, 936.5 \, J \]

(44) \[ \frac{1}{2}mv^2 = 8 \times 10^{-4} \]  
\[ \frac{1}{2}(10^{-2})v^2 = 8 \times 10^{-4} \]

\[ v = 16 \times 10^{-2} \]

\[ \frac{v^2}{2 \alpha} = \frac{6 \times 10^{-2}}{8 \pi (6 \times 10^{-2})} = 0.1 \, m/s^2 \]
46. (1)

Ammonium dichromate on heating gives \( \text{N}_2 \) gas which is also given by heating of \( \text{NH}_4\text{NO}_3 \).

\[
(NH_4)_2\text{Cr}_2\text{O}_7 \rightarrow \text{Cr}_2\text{O}_3 + 4\text{H}_2\text{O} + \text{N}_2 \uparrow
\]

\[
\text{NH}_4\text{NO}_3 \rightarrow 2\text{H}_2\text{O} + \text{N}_2 \uparrow
\]

47. (2)

In \( \text{MnO}_2 \) and \( \text{FeCl}_3 \) oxidation states of Mn and Fe are +4 and +3 respectively. In \( [\text{MnO}_4]^1- \) and \( \text{CrO}_2\text{Cl}_2 \) oxidation state of Mn and Cr are +7 and +6 respectively.
48. (4)

In $[\text{NiCl}_4]^{2-}$ oxidation state of Ni is +2

$\text{Ni}^{2+} = 1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^8$

$\text{sp}^3$ hybridisation

Hence, due to $\text{sp}^3$ hybridisation of $\text{Ni}^{2+}$ in $[\text{NiCl}_4]^{2-}$, the shape of $[\text{NiCl}_4]^{2-}$ is tetrahedral.

49. (2)

A sodium salt of an unknown anion when treated with MgCl$_2$ gives white precipitate (MgCO$_3$) only on one boiling. The anion is HCO$_3$ ion.

$\text{MgCl}_2 + 2\text{NaHCO}_3 \rightarrow \text{Mg(HCO}_3)_2 + 2\text{NaCl}$

$\text{Mg(HCO}_3)_2 \xrightarrow{\text{boiling}} \text{MgCO}_3 + \text{H}_2\text{O} + \text{CO}_2$

50. (2)

$$r = \frac{0.529n^2}{Z^2} \cdot A^0$$

$Z = 1$ for H

$$r_H = \frac{0.529n^2}{1} \cdot A^0$$

$Z = 4$ for Be$^{2+}$

$$r_{\text{Be}^{2+}} = \frac{0.529n^2}{4} \cdot A^0$$

Given,

$$r_H = r_{\text{Be}^{2+}}$$

Hence, it is equal, when $n = 2$ for Be$^{2+}$

Thus:

$$r_2(\text{Be}^{2+}) = r_{1H}$$
51. (3)  

\[ \text{Hence, 4 chiral compound are formed.} \]

52. (3)  
The rate of diffusion is inversely proportional to the square root of the density at constant pressure.

\[ \text{Rate of diffusion} \propto \frac{1}{\sqrt{\text{Density}}} \]

53. (1)  

Deviations from ideal behaviour are expressed in terms of compressibility factor,

\[ Z = \frac{PV}{nRT} \]

For positive deviations,

\[ Z > 1 \]

54. (3)  

55. (3)  

In Kjeldahl's method nitrogen containing organic compound is heated with H_2SO_4 in presence of copper salt as catalyst to convert nitrogen to (NH_4)_2SO_4.

56. (4)  

\[ \text{2-(N,N-dimethyl)aminobutane.} \]
57. (1)

Enantiomers are non-superimposable mirror images, e.g. lactic acid

\[
\begin{align*}
\text{CH}_3 & \quad \text{CH}_3 \\
\text{H} & \quad \text{H} \\
\text{COOH} & \quad \text{COOH}
\end{align*}
\]

58. (2)

S$_2$I reaction is most favourable for tertiary substrate.

\[
\begin{align*}
\text{CH}_3 & \quad \text{Cl} \quad \text{CH}_3 \\
\rightarrow & \quad \text{H}_2\text{C} & \quad \text{C}(\text{\text{\textsuperscript{3}}\text{C}}) \quad \text{CH}_3 \\
\text{CH}_3 & \quad \text{Cl}
\end{align*}
\]

3\text{C} Carbocation (Most stable)

59. (1)

Chloroform reacts with conc. HNO$_3$ to give chloropicrin which is used as tear gas.

\[
\text{CHCl}_3 + \text{HNO}_3 \rightarrow \text{C}_2\text{Cl}_2\text{NO}_2 + \text{H}_2\text{O}
\]

60. (2)

B.F. of (C - Br) < (C - Cl)

hence Mg reacts here.

61. (4)

62. (3)

\[
\begin{align*}
\text{CH}_3\text{NC} & \xrightarrow{\text{H}_2\text{O}} \text{CH}_3\text{NH}_2 + \text{HCOOH} \\
\text{CHCl}_3 & \xrightarrow{\text{NaOH}} \text{HCONA} \xrightarrow{\text{H}_2\text{O}} \text{HCOOH} \\
\text{CCl}_2 & \xrightarrow{\text{H}_2\text{O}} \text{no hydrolysis}
\end{align*}
\]
63. (4)

(4n + 2) = 6 is not followed

(4n + 2) = 6 is followed. The complete delocalisation of π-electrons takes place. Hence, this is aromatic.

(4n + 2) = 6 is not followed.

64. (4)

65. (2)

66. (3)

Generally Mg(OH)₂ is used as an antacid. The metal is Mg which burns in CO₂ atmosphere.

2Mg + CO₂ → 2MgO + C

67. (4)

Due to large steric strain in P₄ molecule of white phosphorus, it is unstable and shows high reactivity and high volatility.

68. (2)

SO⁴⁻ has three c bonds and one π bond. S is sp³ hybridized and one of the sp³ hybrid orbitals is occupied by a lone pair of electrons.

69. (3)

Yellow powder is sulphur. Colourless gas (X) having octahedral structure is SF₆. Colourless gas (Y) is SF₄.

\[
\text{Yellow powder} + 3F₂ \xrightarrow{\Delta} \text{SF₆}_{(X) \text{ colourless gas}}
\]

\[
3\text{SCl}_2 + 4\text{NaF} \xrightarrow{\Delta} \text{SF₄}_{(Y) \text{ Colourless gas}} + \text{S₃Cl₂} + 4\text{NaCl}
\]
70. (4)

XeO₄ is an explosive compound when dry and its explosion powder is 22 times more than TNT.

72. (3)

In Van-Arkel method, the metal is converted into its stable volatile iodide which is then decomposed at higher temperature to pure metal and I₂.

\[ \text{Ti} + 2I₂ \xrightarrow{173K} \text{TiI₄} \xrightarrow{1073K} \text{Ti} + 2I₂ \]

73. (4)

\[ \frac{1}{8} = \frac{1}{2^n} \quad \left( \therefore \frac{N}{N_0} = \frac{1}{2^n} \right) \]

\[ n = 3 \]
\[ t = 10 \times 3 = 30 \text{ days.} \]

74. (3)

The natural rubber has intermolecular forces which are weak dispersion force (van der Waals's forces of attraction). It is an elastomer.

76. (4)

Sodium alkyl sulphate is an anionic detergent because it gives anion which acts as surfactant.

\[ \text{RCH}_2 - \text{SO}_3 \text{Na} \rightarrow \text{RCH}_2 - \text{SO}_3^- + \text{Na}^+ \]

77. (4)

Nitrobenzene on reduction with Zn and NH₄Cl gives N-phenyl hydroxylamine.

\[ \text{NO}_2 \quad \text{NH}_2 \text{OH} \]

\[ \text{N-phenyl hydroxylamine} \]

78. (2)

CCl₄ does not exhibit dipole moment due to its symmetrical structure.

\[ \text{Cl} \]
\[ \text{Cl} - \text{C} - \text{Cl} \]
\[ \text{Cl} \]
79. (4) 

SnO₂ is amphoteric in nature because it reacts with both acid and base.

\[ \text{SnO}_2 + 2\text{HCl} \rightarrow \text{SnCl}_4 + 2\text{H}_2\text{O} \]

\[ \text{SnO}_2 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SnO}_3 + \text{H}_2\text{O} \]

80. (2)

\[ \Delta H = \Delta E + \Delta \text{ngRT} \]

For the reaction,

\[ \text{N}_2\text{(g)} + 3\text{H}_2\text{(g)} \rightarrow 2\text{NH}_3\text{(g)} \]

\[ \Delta n_g = 2 - 4 = -2 \]

\[ \Delta H = \Delta E + (-2)RT \]

\[ \Delta H = \Delta E - 2RT \]

81. (2)

The rate of first order reaction is expressed as

\[ \text{Rate} = \frac{d[A]}{dt} \]

\[ \text{Rate} = k[A] \]

and the rate constant \((k)\) is expressed as

\[ k = \frac{2.303}{t} \log \left[ \frac{A_0}{A_t} \right] \]

\[ k = \frac{t}{2.303} \log \left[ \frac{A_t}{A_i} \right] \]

82. (2)

\[ \text{Rate} = k[A][B] \]

Order of reaction \( = 1 + 1 = 2 \)

Unit of \(k\) = \(\text{mol}^{-1}\text{Ls}^{-1}\)

Rate of formation of \(C\) is half of the rate of disappearance of \(A\).

\[ t_c \propto \frac{1}{a} \]

83. (4)

\[ \text{Ca(OH)}_2 \rightleftharpoons \text{Ca}^{2+} + 2\text{OH}^{-1} \]

\[ K_f = \frac{[\text{S}][2\text{S}]}{[\text{Ca}^{2+}][\text{OH}^{-1}]} \]

\[ K_f = 4\text{s}^2 \]

\[ K_f = 4(\sqrt{3})^4 = 12\sqrt{3} \]
84. \( \frac{M_{\text{BaCl}_2}}{10} \) gives maximum ions in solution hence, it has highest osmotic pressure.

85. \( M_{\text{BaCl}_2} \) gives maximum ions in solution hence, it has highest osmotic pressure.

86. \( \text{Cd}_{(s)} + \text{Pb}^{2+}_{(aq)} \rightarrow \text{Cd}^{2+}_{(aq)} + \text{Pb}_{(s)} \)

\[
\begin{align*}
n &= 2 \\
\Delta G &= -nF\eta \\
&= -2 \times 96500 \times (E^o_{\text{red}} - E^o_{\text{anode}}) \\
&= -2 \times 96500 (-0.126 + 0.403) \\
&= -53461 \text{ J} = -53.46 \text{ kJ}
\end{align*}
\]

87. The Hall process:

\[
\begin{align*}
2\text{Al}_2\text{O}_3 &\rightarrow 4\text{Al} + 3\text{O}_2 \\
4\text{C} + 3\text{O}_2 &\rightarrow 2\text{CO}_2 + 2\text{CO} \uparrow \\
2\text{Al}_2\text{O}_3 + 4\text{C} &\rightarrow 4\text{Al} + 2\text{CO}_2 + 2\text{CO}
\end{align*}
\]

Only for removal of \( \text{CO}_2 \), following equation is possible:

\[
2\text{Al}_2\text{O}_3 + 3\text{C} \rightarrow 4\text{Al} + 3\text{CO}_2
\]

\[\therefore \text{ For } 108 \text{ g of Al, } 36 \text{ g of C is required.} \]

\[\therefore \text{ For } 270,000 \text{ g of Al required amount of C.} \]

\[
\frac{36}{108} \times 270000 = 90,000 \text{ g} = 90 \text{ kg}
\]
According to Hardy-Schulze rule, the coagulating power of an electrolyte is directly proportional to the fourth power of the valency of the effective ion. For a positively charged solution of $\text{Fe(OH)}_3$, the order of coagulating power is as:

$$[\text{Fe(CN)}_6]^{3-} > \text{CrO}_4^{2-} > \text{Cl}^-$$
121. Strategies for Enhancement in Food Production – NCERT – Pg 24
122. Principles of Inheritance and Variation – NCERT – Pg 79
123. Principles of Inheritance and Variation – NCERT – Pg 71
124. Principles of Inheritance and Variation – NCERT – Pg 89
125. Principles of Inheritance and Variation – Option (b) – test cross Option (d) \( TtRr \times ttRr \)

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126. Molecular – NCERT – Pg 111
127. Molecular – NCERT – Pg 118
128. Strategies – NCERT – Pg 175
129. Plant = 2n = 28
   Pollen grain = n = 14
   \( \therefore \) Callus = 14
130. Org & population – NCERT – Pg 230
131. Org & population – NCERT – Pg 236
132. Ecosystem – NCERT – Pg 254
133. Biodiversity – NCERT – Pg 261
134. Biodiversity – NCERT – Pg 267
135. Environmental Issues – NCERT – Pg 276
136. Environmental Issues – NCERT – Pg 285
137. Biodiversity – NCERT Pg –266
138. Environmental issue – NCERT Pg –274
139. Environmental issue – NCERT Pg –282
140. Environmental issue – NCERT Pg –271 & 272
141. (3) Connective tissue is highly vascular and has nerve supply.
142. (3) Bone and cartilage are specialized supporting skeletal tissue.
143. (4) Head and alary muscles are triangular in shape.
144. (3) Malpighian tubules helps to excrete uric acid in cockroach.
145. (4) Isthmus joins uterus.
146. (1) Inguinal canal connects terits to abdomen.
147. (4) Endoplasmic reticulum is absent in sperm.
148. (1) Bacterial disease (Typhoid and Tuberculosis)
149. (3) Ascariasis is common round worm infection.
150. (4)
151. (2) pg 48,2\(^{nd}\) para
152. (3) Tissue level, polyp is fixed and reproduce asexually.
153. (2) Reptiles possess direct development
154. (1) CSF flows in subarachnoid space which is between Arachnoid mater and Pia mater.
155. (2) Pg 321,1\(^{st}\) para
156. (1) Pg324 ,2\(^{nd}\)para
157. (2) Pg 338,3\(^{rd}\)para
158. (2) Vasopressin is ADH hormone and it prevents diuresis.
159. (1) Pg 332,1\(^{st}\)para
160. (2)
161. (1) Medial end : round, Lateral end : flat
162. (1) NCERT XI Pg .303
163. (3) Condom also act as barrier for STDs.
164. (2) Zygote is formed outside and the transplanted into the mother’s body.
165. (1)
166. (3)
167. (3)
168. (3) Bt toxin is coded by cry genes of social bacterium Bacillus thuringiensis
169. (1)
170. (4) It was developed in 1997
171. (2) **Stomach has thickest musculature for churning**
172. (3) Palmitic acid is a saturated fatty acid
173. (1) The curve of HbA will be to the right of curve HbF as HbF has greater affinity for oxygen
174. (2) Tallest wave is R wave and QRS complex denotes ventricular depolarization.
175. (2) Hint: On an average, 1100-1200 ml of blood is filtered by the kidneys per minute which constitute roughly 1/5th of the blood pumped out by **EACH** ventricles of the heart in a minute. JGA is a special sensitive region formed by cellular modifications in the distal convoluted tubule and the **Afferent** arteriole at the location of their contact.
176. (3) **C is cortex having PCT and DCT but medulla has pyramids.**
177. (3) The optically inactive amino acid is glycine and it is neutral
178. (1) Folic acid helps in maturation of RBC. Immature RBCs are larger the mature RBCs
179. (1) **Air moves in due to difference in partial pressure of gases**
180. (4) Digestion of Carbohydrates doesn’t take place in stomach, Digestion of Proteins doesn’t take place in mouth but takes place in stomach. Digestion of Fats doesn’t take place in stomach