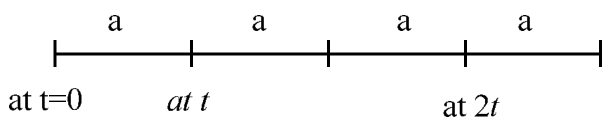
KAB Model TS EAMCET 2017
(Agriculture & Medical)
Key

1) 1	2) 3	3) 2	4) 4	5) 3	6) 4	7) 2	8) 2	9) 4	10) 1
11) 2	12) 3	13) 1	14) 3	15) 2	16) 4	17) 3	18) 1	19) 1	20) 2
21) 2	22) 4	23) 3	24) 2	25) 4	26) 1	27) 1	28) 4	29) 1	30) 3
31) 2	32) 2	33) 3	34) 1	35) 4	36) 2	37) 2	38) 1	39) 4	40) 1
41) 2	42) 3	43) 1	44) 2	45) 3	46) 3	47) 4	48) 4	49) 1	50) 2
51) 4	52) 4	53) 4	54) 3	55) 1	56) 3	57) 4	58) 3	59) 4	60) 2
61) 4	62) 4	63) 2	64) 1	65) 3	66) 4	67) 2	68) 4	69) 2	70) 4
71) 1	72) 1	73) 4	74) 1	75) 1	76) 1	77) 2	78) 1	79) 1	80) 1
81) 1	82) 4	83) 2	84) 2	85) 4	86) 3	87) 3	88) 2	89) 1	90) 3
91) 3	92) 3	93) 2	94) 3	95) 2	96) 4	97) 2	98) 2	99) 2	100) 2
101) 3	102) 3	103) 3	104) 3	105) 2	106) 4	107) 2	108) 2	109) 2	110) 4
111) 3	112) 4	113) 4	114) 3	115) 2	116) 3	117) 2	118) 2	119) 2	120) 3
121) 2	122) 2	123) 2	124) 1	125) 4	126) 1	127) 3	128) 3	129) 2	130) 3
131) 1	132) 3	133) 2	134) 2	135) 2	136) 4	137) 3	138) 1	139) 1	140) 3
141) 2	142) 2	143) 3	144) 4	145) 1	146) 2	147) 1	148) 4	149) 3	150) 1
151) 3	152) 4	153) 3	154) 2	155) 1	156) 4	157) 4	158) 1	159) 3	160) 2

PHYSICS

81) 1



$$t = \frac{T}{6} \Rightarrow T = 6t$$

82) 4

For same material, resistivity is same

$$R = \frac{sl}{\pi r^2} \Rightarrow R \alpha \frac{\ell}{r^2}$$

$$R_1 : R_2 = \frac{l_1}{r_1^2} : \frac{l_2}{r_2^2} = \frac{8 \times 10^{-2}}{\left(2 \times 10^{-3}\right)^2} : \frac{5 \times 10^{-2}}{\left(5 \times 10^{-3}\right)^2} = 10 : 1$$

$$V_1 : V_2 = R_1 : R_2$$

First wire is longer so

$$V_1 = \left[\frac{R_1}{R_1 + R_2}\right] V = 22\left(\frac{10}{10+1}\right) = \frac{22 \times 10}{11} = 20V$$

83) 2

$$V = 18 km/h = 5 m/s$$

$$l = 5m$$

$$\text{Strain rate} = \frac{V}{l}$$

$$\text{Coefficient of viscosity, } \eta = \frac{\text{shearing stress}}{\text{strain rate}}$$

$$\therefore \text{Shearing stress} = \eta \times \text{strain rate}$$

$$= 10^{-2} \times \frac{5}{5} = 10^{-2} Nm^{-2}$$

84) 2

C_1 = Capacitance of the capacitor in the first case $= \dfrac{k_1 \in_0 A}{t_1}$;

C_2 = Capacitance of the capacitor in the second case $= \dfrac{\in_0 A}{\dfrac{t_1}{k_1} + \dfrac{t_2}{k_2}} = \dfrac{k_1 k_2 \in_0 A}{t_1 k_2 + t_2 k_1}$

Given that $\dfrac{k_1 \in_0 A}{t_1} = \dfrac{2 k_1 k_2 \in_0 A}{t_1 k_2 + t_2 k_1}$

Here $t_1 = 3, k_1 = 4, t_2 = 5, k_2 = ?$ $\quad \dfrac{1}{3} = \dfrac{2k_2}{3k_2 + 20} \therefore k_2 = \dfrac{20}{3} = 6.67$

85) 4

$$mg = 2\pi rT$$

$$\Rightarrow T = \frac{mg}{2\pi r}$$

$$\Rightarrow T = \frac{9\times10^{-5}\times9.8}{2\times3.14\times2\times10^{-3}}$$

$$T = 0.07Nm^{-1}$$

86) 3

Given that,

$G = 25\Omega, i_g = 6\times10^{-3}A$

We know that,

$V = i_g\left(G+R\right) \Rightarrow 6 = 6\times10^{-3}\left[25+R\right]$

$\therefore R = 975\Omega$

Which is connected in series to the galvanometer

87) 3

$$Q = \frac{KA\left(\theta_1-\theta_2\right)t}{L} = \frac{K\pi r^2\theta_1 t}{L} = mL_{ice} = Vd\,L_{ice} = \frac{4}{3}\pi r^3 d\,L_{ice}$$

$$\Rightarrow \frac{kt}{L}\alpha r \;\; or \;\; K\alpha\frac{rL}{t}$$

$$\frac{k_1}{k_2} = \frac{r_1}{r_2}\times\frac{L_1}{L_2}\times\frac{t_2}{t_1}$$

$$= \frac{2r_2}{r_1}\times\frac{L_2/4}{L_2}\times\frac{16}{25} = \frac{8}{25}$$

88) 2

$$V_0 = \frac{V_e}{2}$$

$$\sqrt{\frac{GM}{R+h}} = \frac{1}{2}\sqrt{\frac{2GM}{R}} \Rightarrow \frac{1}{R+h} = \frac{1}{2R} \Rightarrow h = R$$

$$PE_1 + KE_1 = PE_2 + KE_2 \Rightarrow \frac{-GMm}{R+h} + 0 = \frac{-GMm}{R} + \frac{1}{2}mV^2$$

$$\Rightarrow V = \sqrt{\frac{GM}{R}} = \sqrt{gR} = \sqrt{10\times6400\times10^3} = 8km/s$$

89) 1

$$n_0 = \frac{V}{2l_0}; l_0 = \frac{V}{2n_0}; n_c = \frac{V}{4l_c}, l_c = \frac{V}{4n_c}$$

$$l_0 + l_c = \frac{V}{4n_0} + \frac{V}{4n_c}$$

$$n = \frac{V}{l_0+l_c} \Rightarrow n = \frac{V}{4\left[\frac{V}{2n_0}+\frac{V}{4n_c}\right]} = \frac{n_0 n_c}{2n_c+n_0}$$

90) 3

Conceptual

91) 3

Current does not flow through D_2 and same current flows through A_1, A_3

92) 3

$$\eta_{max} = 1 - \frac{700}{2100} = \frac{2}{3}$$

$$\therefore \frac{\eta}{\eta_{max}} \times 100 = \frac{2/5}{2/3} \times 100 = 60\%$$

93) 2

We know that resonant frequency in an L-C-R circuit is given by

$$v_0 = \frac{1}{2\pi\sqrt{LC}}$$

Now to reduce v_0 either we can increase L or we can increase C.

To increase capacitance, we must connect another capacitor in parallel to the first.

94) 3

$$U = 3 + 2pV$$

In an adiabatic process

$$dQ = 0 = dU + dW = 0$$

$$\Rightarrow dU = -dW = -P\,dV$$

$$2PdV + 2VdP = -PdV$$

$$(2+1)PdV = -2VdP$$

$$\gamma P = \text{Bulkmodulus} = \text{K} = = \frac{-dP}{\left(\frac{dV}{V}\right)} = \frac{(2+1)P}{2}$$

$$\Rightarrow \frac{3}{2}P = \gamma P \Rightarrow \gamma = \frac{3}{2}$$

95) 2

β particle carries one unit of negative charge, and α -particle carries 2 units of positive charge and γ (particle) carries no charge, therefore electronic energy levels of the atom change for α and β decay, but not for γ-decay.

96) 4

$$\frac{1}{2}mu^2 = \frac{1}{2}mv^2 = Fs$$

$$\frac{1}{2}mu^2 - 0 = Fs$$

$$u^2 \propto s$$

$$\frac{u_1^2}{u_2^2} = \frac{s_1}{s_2} \Rightarrow \frac{s_1}{s_2} = \frac{u^2}{16u^2} = \frac{1}{16}$$

97) 2

$$\frac{1}{\lambda_1} = z^2 R[1]$$

$$\lambda_1 = 1/R$$

$$\frac{1}{\lambda_2} = Z^2 R\left(\frac{1}{4}\right)$$

$$\lambda_2 = \frac{4}{Z^2 R}$$

$$\frac{4}{Z^2 R} = \frac{1}{R}$$

$$Z = 2$$

98) 2

$$\frac{mgl}{2}(1-\cos\theta) = \frac{1}{2}\left(\frac{ml^2}{3}\right)w^2$$

$$w = \sqrt{\frac{3g(1-\cos\theta)}{l}} = \sqrt{\frac{6g}{l}}\sin\left(\frac{\theta}{2}\right)$$

99) 2

$$C = \frac{\epsilon_0 A}{d}$$

$$C = \frac{\epsilon_0 A}{d - t\left(1-\frac{1}{k}\right)} = \frac{\epsilon_0 A}{d - \frac{d}{2}\left(1-\frac{1}{\infty}\right)}$$

$$\therefore \frac{C'}{C} = \frac{2}{1}$$

100) 2

$$B = \frac{\mu_0 Ni\, a^2}{2\left(a^2 + x^2\right)^{\frac{3}{2}}}$$

$$B \propto \frac{1}{\left(a^2 + x^2\right)^{\frac{3}{2}}}$$

$$\frac{B_1}{B_2} = \left[\left(\frac{a^2 + x_2^2}{a^2 + x_1^2}\right)^{\frac{1}{2}}\right]^3 = \left(\sqrt{\frac{a^2 + x_2^2}{a^2 + x_1^2}}\right)^3$$

$$or\ 2^3 = \left(\sqrt{\frac{a^2 + x_2^2}{a^2 + x_1^2}}\right)^3 \quad or\ \ 2 = \sqrt{\frac{a^2 + x_2^2}{a^2 + x_1^2}}$$

or $4\left(a^2 + x_1^2\right) = a^2 + x_2^2 \ \ or\ \ 3a^2 = x_2^2 - 4x_1^2$

Here $x_1 = 0.05m \quad and\ x_2 = 0.2m$

101) 3

Horizontal component of the earth's magnetic field, H_E =0.26G

Angle of dip, $\delta = 60^0\ \cos\delta = \frac{H_E}{B_E}$

Where B_E is the magnetic field of the earth at that place.

$$\therefore B_E = \frac{H_E}{\cos\delta} = \frac{0.26G}{\cos 60^0} = \frac{0.26G}{(1/2)} = 0.52G$$

102) 3

$I_0 \rightarrow$ incident intensity

$$I_1 = I_0 \cos\theta = \frac{I_0}{2}$$

$I_2 = I_1 \cos^2\theta = \frac{I_0}{2}\left(\frac{1}{4}\right) = \frac{I_0}{8} \Rightarrow$ percentage intensity of light that passes through the system is = 12.5%

103) 3

$$r = R\left(\frac{l_1 - l_2}{l_2}\right) = 10\left(\frac{15}{60}\right) = 2.5\Omega$$

104) 3

$$g = \frac{4\pi^2 L}{T^2},$$

$$\frac{\Delta g}{g} \times 100 = \frac{\Delta L}{L} \times 100 + \frac{2\Delta T}{\mathrm{T}} \times 100 = 1 + (2 \times 3) = 7\%$$

105) 2

$$\delta = i_1 + i_2 - A$$

$$30 = 15 + 60 - A$$

$$A = 75 - 30 = 45^\circ$$

106) 4

Moment of inertia =$[ML^2]$

Moment of force =$[ML^2T^{-2}]$

107) 2

$$hf = w_1 + k.E_1 \text{ and } h(2f) = W_2 + K.E_2$$

$$2hf = 2W_1 + 2K.E_1 \qquad ....(1)$$

$$\frac{W_1}{W_2} = \frac{1}{2};\ W_2 = 2W_1;\ h(2f) = 2W_1 + K.E_2$$

$$K.E_2 - 2K.E_1 = 2hf - 2hf = 0$$

$$\frac{K.E_1}{K.E_2} = \frac{1}{2} \Rightarrow K.E_1 : K.E_2 = 1:2$$

108) 2

$$\lambda = \frac{1}{\sqrt{2}} \frac{kT}{\pi d^2 P} \text{ and } \lambda = \frac{m}{\sqrt{2}\pi d^2 \rho}$$

109) 2

$$F=\frac{YAe}{\ell}=\frac{Y\left(\pi r^2\right)e}{\ell}$$

110) 4

$$\frac{1}{(75-x)}-\frac{1}{-x}=\frac{1}{12}$$

111) 3

$$1=\frac{\lambda}{4}$$

112) 4

$$m=\frac{E_{max}-E_{min}}{E_{max}+E_{min}}$$

113) 4

$\overline{V}=40\hat{i}+40\hat{j}$ Time of ascent $t_a=\frac{40}{10}=4s.$ After four seconds it is at its max height and its horizontal displacement is $x=40\times4=160m.$ From the highest point in its trajectory it is again projected horizontally with a speed of $40ms^{-1}$. (Direction of throw is not specified). The time of descent is $\sqrt{\frac{2\times80}{10}}=4\text{ sec}$ and from that point the horizontal distance travelled by it is 160m, since horizontal velocity is $40ms^{-1}$. However this 160m can be in any direction therefore the displacement is vector addition of $\left|\overline{R}_1\right|=160m$ and $\left|\overline{R}_2\right|=160m.$ Range of $\left|\left(\vec{R}_1+\vec{R}_2\right)\right|$ will be any value in between zero and 320m. Hence D is correct option.

114) 3

The given elastic collision is oblique. Hence we apply conservation of K.E.

$$\frac{1}{2}mV^2=\frac{1}{2}m\left(\frac{V}{2}\right)^2+\frac{1}{2}mV_B^2$$

$$V_B=\frac{\sqrt{3}V}{2}$$

115) 2

$$30\times10=10(g+a)=10(10+a)\Rightarrow a=20\text{ m/s}^2$$

$$10=\frac{1}{2}\times20\times t^2\Rightarrow t=1\text{sec}$$

116) 3

$$mgh = \frac{1}{2}MV_{Cm}^2 + \frac{1}{2}\left(\frac{MR^2}{2}\right)\frac{V_{Cm}^2}{R^2} = \frac{1}{2}\left(\frac{3M}{2}\right)V_{Cm}^2$$

$$\therefore V_{Cm} = \sqrt{\frac{4gh}{3}}$$

117) 2

$$\ell : b = 1:6 \qquad \ell^2 = \frac{0.54}{6}$$

$$\ell \times 6\ell = 0.54 \qquad \ell = 0.3 \text{ and } b = 1.8$$

$$I = \frac{m\left(\ell^2 + b^2\right)}{12} = 120\times10^{-3}\left(\frac{0.3^2 + 1.8^2}{12}\right)$$

$$= 3.33\times10^{-2}\,kgm^2$$

118) 2

$$PV^{\gamma} = \text{constant}$$

$$-\frac{dP}{P}\times100 = \gamma\left(\frac{dV}{V}\times100\right)\%$$

$$= 1.4\times2 = 2.8\%$$

119) 2

$$\frac{P_1V_1}{RT_1} = \frac{P_2\,V_2}{R\,T_2}$$

$$\frac{5P_0\,V_0}{R\times285} = \frac{P_0V}{R\times308}$$

$$V = \frac{308}{285}\times5\times10^{-6}\text{ m}^3 = 5.3\times10^{-6}\text{ m}^3$$

120) 3

$$t = 2\sqrt{\frac{\ell}{g}}$$

CHEMISTRY

121) 2

$SO_2 + 2H_2O \longrightarrow H_2SO_4 + 2[H]$

$\therefore$ SO_2 Bleaches by reduction in presence of moisture.

122) 2

$Mn - [Ar]3d^5 4s^2$

$Mn^{2+} - [Ar]3d^5$ (5 unpaired $e^- s$)

$\rightarrow Fe - [Ar]3d^6 4s^2$

$Fe^{+3} - [Ar]3d^5 4s^0$ (5 unpaired $e^- s$)

$\because Mn^{+2}, Fe^{+3}$ have same no. of unpaired electrons. Thus they have same magnetic moment.

123) 2

$\rightarrow \lambda$ of e^- in 1st orbit
of H = 3.3°A
$\rightarrow \lambda$ of e^- in any other orbit of H = 3.3× n°A

Where n = 1,2, 3 etc.
$\rightarrow$ 3.33 × 10 = 33.3 (10th orbit)
$\rightarrow$ 3.33 × 3 = 9.99 (3rd orbit)
$\rightarrow$ 3.33 × 6 = 19.98 (6th orbit)
But 4.98°A is 3.33 × 1.5 and hence 4.98°A is not possible.

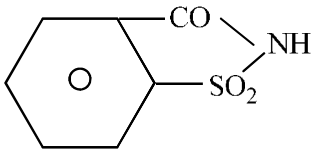
124) 1

O_2 has 2 unpaired e^- in $2\pi^*$ antibonding M.O.

$O_2 = 16\sigma 1s^2 \overset{*}{\sigma} 1s^2 \sigma 2s^2 \overset{*}{\sigma} 2s^2 \sigma 2p_z^2 \pi 2p_x^2 = \pi 2p_y^2$

$\pi^* 2p_x^1 = \pi^* 2p_y^1$

125) 4

Saccharin is 

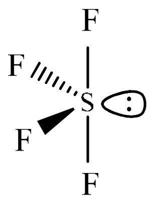
The chemical name is ortho – sulphobenzimide

126) 1

$3Cl_2 + 6OH^- \longrightarrow 5Cl^- + ClO_3^- + 3H_2O$

6 moles of $NaOH$ causes disproportionation of 3 moles of Cl_2, out of which 1mole-atm undergoes oxidation i.e., 35.5 gm

127) 3



In SF_4, there are two axial and two equatorial bounds.

128) 3

Thymine is present in DNA where as Uracil is present in RNA

129) 2

1) $Zn + 2NaOH \rightarrow Na_2 ZnO_2 + H_2$
2) $P_4 + 3NaOH + 3H_2O \rightarrow 2 NaH_2PO_2 + PH_3$
3) $Si + 2NaOH + H_2O \rightarrow Na_2SiO_3 + 2H_2$
4) $2Al + 2NaOH + 2H_2O \rightarrow 2NaAlO_2 + 3H_2$

130) 3

The correct increasing basic strength: $SbH_3 < AsH_3 < PH_3 < NH_3$

NH_3 is the most basic because of its small size, the electron density of electron pair is concentrated over small region. As the size increases, the electron density gets diffused over a large surface area and hence the ability to donate the electron pair (basicity) decreases.

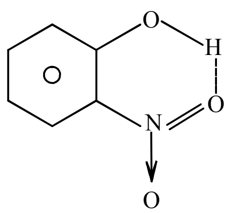
131) 1

Lactose is a disaccharide of D-Glucose and D-Galactose.
'C_1' of Galactose is linked to 'C_4' of Glucose through $\beta -$ linkage.

132) 3

$B_2H_6 + H_2O \rightarrow X + H_2$ $X \xrightarrow{100°C} Y + H_2O$
$X = H_3BO_3 Y = B_2O_3 CoO + B_2O_3 \rightarrow$ Blue colour $Co(BO_2)_2$

133) 2



$\longrightarrow$ H – Bond

134) 2

Enthalpy is state function and extensive thermodynamic property.
$\because$ Enthalpy depends on initial and final state of the system. It also depends on the amount of substance.

135) 2

$PCl_3 + 3C_2H_5OH \rightarrow 3C_2H_5Cl + H_3PO_3$
$PCl_5 + C_2H_5OH \rightarrow C_2H_5Cl + POCl_3 + HCl$
To get 4moles C_2H_5Cl the ratio of number of moles of PCl_3 and PCl_5 required is 1 : 1

136) 4

Conc. HNO_3 oxidises $-CH_2OH$ group to COOH group

137) 3

$r_1 = K[A]^2[B]; r_2 = K[2A]^2[2B] = 8r_1$

138) 1

Copper is below Hydrogen in the electro chemical series

139) 1

C_{rms} of 'X' at 400K = C_{mp} of Y at 60K

$$\sqrt{\frac{3RT_x}{M_x}} = \sqrt{\frac{2RT_y}{M_y}}$$

$$\frac{3\times 400}{40} = \frac{2\times 60}{M_y}$$

$\therefore M_y = 4\ g/mole$

140) 3

$\overset{+5}{NO_3^-} \longrightarrow \overset{-3}{NH_4^+}$ +5 to −3 total 8 moles of e^- are involved.

141) 2

In acidic medium for $KMnO_4$ N = M × 5

Number of gram equivalents of oxalic acid = Number of gram equivalents of

$$KMnO_4 = \frac{NX\ vol(in\ ml)}{1000} = \frac{250\times 0.04\times 5}{1000} = 0.05$$

142) 2

$$\frac{V_H}{V_{He^+}} = \frac{Z_H\times n_3}{Z_{He}\times n_1} \Rightarrow \frac{X}{V_{He^+}} = \frac{1\times 3}{2\times 1} \Rightarrow V_{He^+} = \frac{2X}{3}$$

143) 3

$\Delta S^0 = +5k.cal(given)$

$\Delta G^0 = H_G - H_R = 500 - [200 + (2\times 300)] = -300cal$ and $\Delta G^0 = \Delta H - T\Delta S$

$\therefore \Delta H = \Delta G^0 + T\Delta S = -300 + (300\times 5) = +1200\text{cals} \Rightarrow \Delta H$ is $+ve$ and ΔG is $-ve$

144) 4

$M + (x+y)NH_3 \to [M(NH_3)_x]^+[e(NH_3)_y]^-$

145) 1

Electronic distribution in molecular orbitals.

O_2^- : $\sigma 1s^2$ σ^*1s^2 $\sigma 2s^2$ σ^*2s^2 $\sigma 2p_z^2$ $\pi 2p_x^2$ $\pi 2p_y^2$ $\pi^*2p_x^2$ $\pi^*2p_y^1$ Number of antibonding electrons =7

O_2: $\sigma 1s^2$ σ^*1s^2 $\sigma 2s^2$ σ^*2s^2 $\sigma 2p_z^2$ $\pi 2p_x^2$ $\pi 2p_y^2$ $\pi^*2p_x^1$ $\pi^*2p_y^1$ Number of antibonding electrons =6

O_2^{-2} : $\sigma 1s^2$ σ^*1s^2 $\sigma 2s^2$ σ^*2s^2 $\sigma 2p_z^2$ $\pi 2p_x^2$ $\pi 2p_y^2$ $\pi^*2p_x^2$ $\pi^*2p_y^2$ Number of antibonding electrons =8

146) 2

Order of first ionization enthalpy 0 < N < F < Ne

147) 1

$BeSO_4$ Due to small size of Be^{+2}, hydration energy is more

148) 4

$(CH_3)_3 Si-Cl$

149) 3

In 1, 4-dichloro benzene and trans-1, 2-dichloro ethene the two C-Cl bond moments cancels each other. So net dipole moment of molecule is equal to zero. But in cis-1, 2-dichloro ethene two bond moments are in same direction. So net dipole moment of molecule is not equal to zero

150) 1

Conceptual

151) 3

$$CH_3COOH + Na \longrightarrow \underset{X}{CH_3COONa} \xrightarrow[CaO]{NaOH} \underset{A}{CH_4}$$

$$2CH_3COOH + 2H_2O \xrightarrow{Electrolysis} \underset{B}{C_2H_6} + CO_2 + KOH + H_2$$

152) 4

In the depletion of ozone layer the following reactions takes place

In summer – $ClO^{\bullet} + NO_2 \longrightarrow ClONO_2$ and $Cl^{\bullet}$ (g) + CH_4 (g) → $CH_3^{\bullet}$ (g) + HCl(g)

In winter – $ClONO_2 + H_2O \longrightarrow HOCl + HNO_3$

In Spring – $HOCl \longrightarrow OH^{\bullet} + Cl^{\bullet}$

153) 3

$B.P \propto$ Number of solute particles

154) 2

	[A]	[B]	Rate of reaction (Ms^{-1})
1)	0.020	0.010	$2.4 \times 10^{-4} = [0.02]^x [0.01]^y$
2)	0.020	0.030	$2.16 \times 10^{-3} = [0.02]^x [0.03]^y$
3)	0.040	0.030	$4.32 \times 10^{-3} = [0.04]^x [0.03]^y$

From experiment 1 and 2 $3^y = 9 = 3^2$ $y = 2$

From experiment 2 and 3 $2^x = 2$ $x = 1$

So, total order of the reaction is 3

155) 1

The decreasing order of volatile nature of 15 group hydrides is

$PH_3 > AsH_3 > NH_3 > SbH_3 > BiH_3$

156) 4

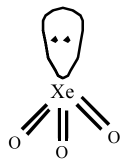
F_2 has low bond dissociation energy

157) 4

Aldol condensation

158) 1

$XeF_6 + 3H_2O \longrightarrow XeO_3 + 6HF$



159) 3

Nylon 6, 10 is a condensation polymer (polyamide) of sebacic acid and hexamethylene diamine.

160) 2

Williamson synthesis is an S_N2 reaction, therefore not preferable for tertiary halides.