

# **CLASSROOM CONTACT PROGRAMME**

(Academic Session: 2019 - 2020)

# Enthusiast, Leader & Achiever Course

PHASE : ALL PHASE TARGET : PRE-MEDICAL 2020

Test Type: MAJOR Test Pattern: NEET (UG)

TEST DATE: 03-09-2020

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Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Α.	1	2	4	4	3	1	2	2	2	1	1	2	4	4	3	2	2	2	4	1	3	3	2	1	1	2	4	4	1	1
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Α.	2	4	2	3	1	2	2	2	2	4	4	1	1	4	1	3	3	3	1	1	2	4	3	4	1	3	4	1	3	1
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Α.	2	4	3	1	3	3	1	1	1	4	2	3	4	2	4	2	4	2	4	1	1	4	2	2	4	2	3	2	4	1
Q.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Α.	2	4	2	4	3	3	3	1	4	2	1	3	3	4	3	1	1	3	2	3	2	2	2	2	3	4	2	4	1	2
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
Α.	3	2	4	4	4	2	1	1	2	4	3	3	3	4	3	3	2	3	2	2	1	1	4	3	2	3	1	4	4	1
Q.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Α.	1	3	2	4	1	2	2	4	4	3	2	3	1	2	1	1	3	1	2	3	2	1	3	1	2	1	3	3	2	3

# HINT - SHEET

## 1. Ans (1)

Weight of cylinder = upthrust due to both liquids

$$V \times D \times g$$

$$= \left(\frac{A}{5} \times \frac{3}{4}L\right) \times d \times g + \left(\frac{A}{5} \times \frac{L}{4}\right) \times 2d \times g$$

$$\Rightarrow \left(\frac{A}{5} \times L\right) \times D \times g = \frac{A \times L \times d \times g}{4}$$

$$\Rightarrow \frac{D}{5} = \frac{d}{4}$$

$$\therefore D = \frac{5}{4}d$$

#### 2. Ans (2)

$$60 \times 1(40 - T) = 10 \times 80 + 10 \times T$$
  
 $2400 - 60 T = 800 + 10 T$   
 $70 T = 1600$   
 $T = \frac{160}{7}$  °C  
 $\approx 23$ °C

# 3. Ans (4)

Angular frequency of simple pendulum,

$$\omega = \sqrt{\frac{g}{\ell}}$$

As the support oscillate up and down, effective

g changes

$$\Delta g = 2.\omega_0^2 A = 2\times 1^2\times 10^{-2} ms^{-2}$$

$$= 0.02 \text{ ms}^{-1}$$

Change in angular frequency do of the

pendulum is given by

$$\frac{d\omega}{\omega} = \frac{-1}{2} \cdot \frac{dg}{g}$$

$$\frac{|\Delta\omega|}{\omega} = \frac{1}{2} \frac{|\Delta g|}{g}$$

$$= \frac{1}{2} \times \frac{0.02}{10}$$

$$= 0.001 \text{ rad s}^{-1}$$

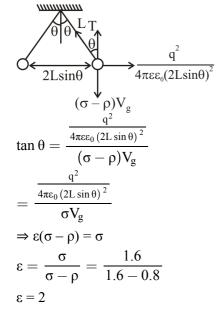


#### 4. Ans (4)

By comparing given equation of progressive wave with standard equation  $y = a\cos(kx - \omega t)$ , we get

$$k = \frac{2\pi}{\lambda} = \alpha \Rightarrow \alpha = \frac{2\pi}{0.08} = 25\pi$$
  
and  $\omega = \frac{2\pi}{T} = \beta \Rightarrow \beta = \frac{2\pi}{2} = \pi$ 

#### 5. $\operatorname{Ans}(3)$



## 6. Ans (1)

As condenser is isolated, dielectric is placed, charge constant, capacity increase  $C = \frac{\in . \, KA}{d}$  & potential  $V = \frac{q}{C} \Rightarrow C \uparrow, V \downarrow$  potential energy  $U = \frac{q^2}{2C} \downarrow$ 

### 7. Ans (2)

Here, i = 4A, V = 20 volt, so,

$$R = \frac{V}{I} = \frac{20}{4} = 5\Omega$$

Since, voltmeter is connected in parallel with resistance R, the effective resistance of this combination is 5  $\Omega$  only if the resistance R is greater than 5  $\Omega$ , since total resistance in parallel combination becomes less than individual resistance.

#### 8. Ans (2)

Given: Energy level of ground state of hydrogen  $(n_i) = 1$ .

We know that atomic number of hydrogen atom  $(Z_i) = 1$  and atomic number of beryllium atom  $(Z_i) = 4$ .

We also know that orbital radius,

$$r = 4\pi\epsilon_{\text{o}} \times \frac{n^2 h^2}{4\pi m e^2 Z} \text{ or } n \propto \sqrt{Z}$$

Since, orbital radius of ionised beryllium is equal to the orbital radius of hydrogen atom in ground state, therefore

$$\frac{\mathbf{n}_1}{\mathbf{n}_2} = \sqrt{\frac{Z_1}{Z_2}} = \sqrt{\frac{1}{4}} = \frac{1}{2}$$
or  $\mathbf{n}_2 = 2\mathbf{n}_1 = 2 \times 1 = 2$ 

#### 9. Ans (2)

F = 7 - f<sub>s</sub> = 10a  $\alpha$   $\uparrow N$   $\downarrow N$ 

#### 10. Ans (1)

AB → constant pressure compression

$$\Delta W = -ve$$
,  $\Delta U = -ve$   $(V \downarrow T \downarrow)$   
 $\Delta Q = -ve$ 

 $\Delta W = 0$ ,  $\Delta U = -ve (P \downarrow T \downarrow)$ 

CD → constant pressure

$$\Delta W = +ve$$
,  $\Delta U = +ve$  ( $V \uparrow T \uparrow$ )

DA → isothermal

$$\Delta W = -ve$$
  
 $\Delta U = 0$   
 $\Delta Q = -ve$ 



#### 12. Ans (2)

Magnetic field =  $B_H$ 

$$T = 60/12 = 5 \text{ sec}$$

Magnetic field =  $B_H + B$ 

$$T = 60/15 = 4 \text{ sec}$$

Let after reversing magnetic needle makes x oscillation per minute.

Magnetic field =  $B_H - B_T = 60/x$  sec

$$T \propto \frac{1}{\sqrt{\text{Magnetic field}}} \Rightarrow \frac{5}{4} = \sqrt{\frac{B_{\text{H}} + B}{B_{\text{H}}}}$$
$$\Rightarrow \frac{B}{B_{\text{H}}} = \frac{9}{16}$$
$$\Rightarrow \frac{5}{\left(\frac{60}{x}\right)} = \sqrt{\frac{B_{\text{H}} - B}{B_{\text{H}}}} = \frac{x}{10} = \sqrt{\frac{7}{16}}$$
$$\Rightarrow x = \sqrt{63}$$

## 13. Ans (4)

Let  $I = I_0 \sin \omega t$ 

Where  $I_0 = 10$ ,  $\omega = 100$ 

Then 
$$\varepsilon = M \frac{dl}{dt}$$

$$\div \varepsilon_{\text{max}} = M \frac{d}{dt} I_0 \sin \omega t$$

 $= M I_0 \omega \cos \omega t$ 

$$= \mathbf{M} \times 10 \times 100\pi$$

$$M = 5 \text{ mH}$$

#### 14. Ans (4)

Current will be maximum in the condition of resonance.

So, 
$$I_{max} = \frac{E}{R} = \frac{E}{10}A$$

Energy stored in the coil

$$U_L = \frac{1}{2} L I_{max}^2 = \frac{1}{2} \times 10^{-5} E^2$$

energy stored in the capacitor

$$U_{\rm C} = \frac{1}{2} {\rm CE}^2 = 10^{-6} {\rm E}^2$$

$$\therefore \frac{U_C}{U_L} = \frac{1}{5}$$

#### 16. Ans (2)

For TIR  $i > i_C$ 

$$60^{\circ} > i_{C} \Rightarrow \sin 60 > \sin i_{c}$$

$$\frac{\sqrt{3}}{2} > \frac{\mu}{(3/2)} \quad \Rightarrow \quad \mu < \frac{3\sqrt{3}}{4}$$

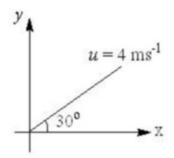
#### 17. Ans (2)

$$I^{11} = \frac{I}{2}\cos^2 45$$
 $I^{11} = \frac{I}{4}$ 

Transmitted light = 
$$\frac{I^{11}}{I} = \frac{\frac{I}{4} \times 100}{I}$$
  
=  $\frac{I}{\frac{4}{I}} \times 100 = 25\%$ 

## 18. Ans (2)

Components of velocity of ball relative to lift are



$$u_x = 4 \cos 30^\circ = 2\sqrt{3} \text{ms}^{-1}$$

and 
$$u_v = 4 \sin 30^\circ = 2 \text{ms}^{-1}$$

and acceleration of ball relative to lift is 12 ms<sup>-2</sup>

in negative y-direction or vertically downwards.

Hence, time of flight

$$T = \frac{2u_y}{12} = \frac{u_y}{6} = \frac{2}{6} = \frac{1}{3}s$$

#### 21. Ans (3)

$$T = \frac{F}{2\ell} = \frac{728}{2 \times 5}$$

$$\Rightarrow$$
 T = 72.8 dyne/cm



22. Ans (3)

$$\frac{R_1}{R_2} = \frac{R_3}{R_4} \text{ and } R \propto \frac{1}{K}$$

so, 
$$\frac{K_2}{K_1} = \frac{K_4}{K_3}$$

$$\Rightarrow K_1K_4 = K_2K_3$$

24. Ans (1)

In case of spherical metal conductor the charge quickly spreads uniformly overthe entire surface because of which charges stay for longer time on the spherical surface. While in case of non-spherical surface, the charge concentration is different at different points due to which the charges do not stay on the surface or longer time.

25. Ans (1)

Power dissipated =  $i^2R = \left(\frac{E}{R+r}\right)^2R$ 

$$\therefore \left(\frac{E}{R_1+r}\right)^2 R_1 = \left(\frac{E}{R_2+r}\right)^2 R_2$$

 $\Rightarrow$ 

$$R_1(R_2^2 + r^2 + 2R_2r) = R_2(R_1^2 + r^2 + 2R_1r)$$

$$\Rightarrow R_1R_2^2 + R_1r^2 + 2R_1R_2r$$

$$=+R_2R_1^2+R_2r^2+2R_1R_2r$$

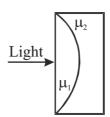
$$\Rightarrow (R_1 - R_2)r^2 = R_1R_2(R_1 - R_2)$$

$$\Rightarrow r = \sqrt{R_1 R_2}$$

26. Ans (2)

$$B = B_0 n^2$$
$$= (5)^2 B_0$$
$$= 25 B_0$$

27. Ans (4)



Equivalent focal length is given by

$$\begin{split} &= \frac{1}{f_{eq}} = \frac{1}{f_1} + \frac{1}{f_2} \\ &\frac{1}{f_{eq}} = (\mu_1 - 1) \left( \frac{1}{\infty} - \frac{1}{-R} \right) + (\mu_2 - 1) \left( \frac{1}{-R} - \frac{1}{\infty} \right) \\ \Rightarrow & f_{eq} = \frac{R}{\mu_1 - \mu_2} \end{split}$$

28. Ans (4)

$$I_C = 10 \text{ mA}$$

$$i_C = i_E \times \frac{95}{100}$$

$$i_E = \frac{100 i_C}{95} = 10.53 \text{ mA}$$

$$i_{\rm B}\,=i_{\rm E}\,-i_{\rm C}$$
 = 10.53 – 10 = 0.53 mA

30. Ans (1)

At equator

$$g' = g - \omega^2 R$$

 $\omega = increase$ 

g' = decrease



### 31. Ans (2)

$$\eta = 1 - \frac{T_2}{T_1} = 1 - \frac{300}{500} = \frac{2}{5}$$

$$\eta = \frac{W}{Q} \qquad Q = \frac{W}{\eta} = \frac{1000J}{2/5}$$

$$Q = 2500 J$$

#### 33. Ans (2)

Resultant magnetic force on current carrying

loop in uniform magnetic field is always zero.

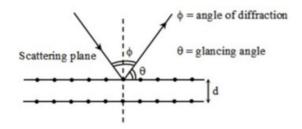
$$|\vec{F}_1 + \vec{F}_2 + \vec{F}_3 + \vec{F}_{OP}| = 0$$

$$\vec{F}_{OP} = |-\vec{F}_1 + \vec{F}_2 + \vec{F}_3|$$

$$=\sqrt{(F_3-F_1)^2+F_2^2},$$

where  $F_3 > F_1$  and  $(F_3 - F_1) \perp F_2$ 

# 35. Ans (1)



From the diagram,

$$\theta = 90^{\circ} - \frac{\phi}{2}$$

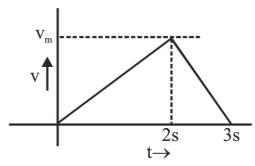
# 40. Ans (4)

Using the relation

$$\begin{split} s &= \frac{\alpha\beta t^2}{2(\alpha+\beta)} = \frac{2\times4\times3\times3}{2(2+4)} \\ \left( \begin{array}{c} \text{Given}: \ \alpha = 2\text{m/s}^2 \\ \beta = 4\text{m/s}^2 \end{array} \right) \\ &= \frac{2\times4\times3\times3}{2\times6} = 6\text{m} \end{split}$$

#### OR

$$v_m = 2 \times t_1, v_m = 4 \times t_2$$



$$\Rightarrow 2t_1 = 4t_2 \Rightarrow t_1 = 2t_2$$

also 
$$t_1 + t_2 = 3s \Rightarrow t_1 = 2s$$
 and  $t_2 = 1s$ 

and 
$$v_m$$
 = 2  $\times$  2 = 4  $m/s^2$ 

$$distance = area = \frac{1}{2} \times 4 \times 3 = 6m$$

#### 41. Ans (4)

$$m_{total} = \frac{m}{\left(1 - \frac{1}{2}\right)} = 2m$$

$$\Rightarrow a = \frac{F}{2m} \Rightarrow F_3 = \left(\frac{m}{4}\right) a = \frac{F}{8}$$

#### 42. Ans (1)

$$w = \frac{1}{2} \times 6 \times 10 - 4 \times 5 + 4 \times 5 - 5 \times 2$$
$$= 30 - 20 + 20 - 10 = 20J$$

$$w = k_f - k_i$$

$$20 = k_f - 25$$

$$k_f = 45J$$



## 43. Ans (1)

For 
$$\theta < 5^{\circ}$$
  $\tan \theta \approx \theta \approx 2 = 2 \times \frac{\pi}{180}$   
 $\tan \theta = \frac{v^2}{rg} = \frac{h}{b}$   
 $\frac{2 \times 3.14}{180} = \frac{h}{1800} = 62.8 \text{ mm}$ 

# 44. Ans (4)

Angular momentum = momentum  $\times$  perpendicular distance.

For motion along BC, perpendicular distance does not change.

## 46. Ans (3)

$$\Delta G = (2 \times 60) - (2 \times 90 + 70)$$
  
= 120 - (180 + 70)  
= 120 - 250 = -130 kJ/mol

 $\therefore \Delta G < 0$ , so the reaction is spontaneous

## 47. Ans (3)

$$(OH-) = \frac{(0.6 \times 100) - (0.5 \times 100)}{200}$$
$$[OH^{-}] = \frac{60 - 50}{200} = 0.05 \text{ M}$$
$$pOH = log (5 \times 10^{-2})$$
$$= 2 - log 5 = 1.3$$
$$pH = 12.7$$

#### 48. Ans (3)

$$T_b^o = 99.28^{\circ}C$$
 $T_b = ?, \Delta T_b = K_{b.m}$ 

$$\Rightarrow T_b - 99.28 = 0.513 \times 0.7$$

$$\Rightarrow T_b = 99.28 + 0.3591$$

$$= 99.64^{\circ}C$$

#### 49. Ans (1)

If the experiment is set such that only the colloidal particles are allowed to move towards anode and net the DM it is known as anaphoresis.

#### 50. Ans (1)

SC 
$$2r = a$$
  
fcc  $4r = \sqrt{2} a$   
bcc  $4r = \sqrt{3} a$ 

#### 51. Ans (2)

$$P_1V_1 = nRT_1$$
;  $P_2V_2 = nRT_2$   
 $P_1 = P_2$ ;  $V_1 = V_2$   
 $\Rightarrow n_1T_1 = n_2T_2$   
 $\Rightarrow 1 \times 300 = n_2 \times 500$   
 $\Rightarrow n_2 = 0.6$   
 $\Rightarrow 0.4$  moles are withdrawn

#### 52. Ans (4)

$$Mn^{+7} + X^{th} \rightarrow XO_3^{+5} + Mn^{+2}$$
eq of MnO<sub>4</sub><sup>-</sup> = eq of X<sup>th</sup>

$$n_1 \times v.f_1 = n_2 \times v.f_2$$

$$\Rightarrow 6 \times 10^{-3} \times 5 = 9 \times 10^{-3}(5 - n)$$

$$\Rightarrow \frac{10}{3} = 5 - n$$

$$\Rightarrow n = \frac{5}{3}$$

# 54. Ans (4)

Two rates are related as

$$\frac{-d \left[BrO_3^-\right]}{dt} = \frac{1}{3} \frac{d \left[Br_2\right]}{dt}$$
$$\frac{-d \left[BrO_3^-\right]}{dt} = \frac{1}{3} (0.025)$$
$$\Rightarrow (0.0083)$$



#### 55. Ans (1)

$$2H_2O_2(1) \rightarrow 2H_2O(1) + O_2(g)$$

$$\Delta H_{reaction}^{o} = \Delta H_{f}^{o}(products) - \Delta H_{f}^{o}(reactants)$$

$$-196 \Rightarrow 2\Delta H_{f}^{o}[H_{2}O(h)] + \Delta H_{f}^{o}(O_{2}) - 2\Delta H_{f}^{o}2H_{2}O_{2}(h)$$

$$-196 = 2x + 0 - 2(-188)$$

$$x = \Delta H_f^0 [H_2O(I)] = -286 \text{ kJ/mol}.$$

#### 56. Ans (3)

$$\frac{\text{wt of Al deposited}}{\text{wt of Cu deposited}} \Rightarrow \frac{\text{eq. wt of Al}}{\text{eq. wt of Cu}}$$

$$\frac{\mathrm{W}(\mathrm{Al})}{6.35} \Rightarrow \frac{27/3}{63.5/2}$$

$$W(Al) = \frac{9 \times 2}{63.5} \times 6.35$$

$$= 1.8 g$$

#### 57. Ans (4)

For isotonic solution

$$(Na_2SO_4)\pi_1 = \pi_2(G)$$

$$i C_1 RT = C_2 RT$$

$$(1 + 2 \propto) 0.008 = 0.01$$

$$1 + 2 \propto = \frac{0.01}{0.008} = \frac{10}{8} = 1.25$$

$$\propto = \frac{0.25}{2} = 0.125$$

$$\% = 12.5 \%$$

#### 58. Ans (1)

$$k_1 = \frac{\left[NH_3\right]^2}{\left[N_2\right]\left[H_2\right]^3} \quad k_2 = \frac{\left[NO\right]^2}{\left[N_2\right]\left[O_2\right]} \quad k_3 \frac{\left[H_2O\right]}{\left[H_2\right]\left[O_2\right]^{1/2}}$$

$$2NH_3 + \frac{5}{2}O_2 \rightleftharpoons 2NO + 3H_2O$$

$$k_{eq} = \frac{\left[NO\right]^{2} \left[H_{2}O\right]^{3}}{\left[NH_{3}\right]^{2} \left[O_{2}\right]^{5/2}} \Rightarrow \frac{k_{2} \times k_{3}^{3}}{k_{1}}$$

Required reaction

$$NH_3 + \frac{5}{4}O_2 \rightleftharpoons NO + \frac{3}{2}H_2O$$

$$k_{eq} = \frac{k_2^{1/2} k_3^{3/2}}{k_1^{1/2}}$$

#### 59. Ans (3)

$$P_1 = 620 \text{ mm}$$

$$P_2 = 640 \text{ mm}$$

$$V_1 = 300 \text{ cc}$$

$$V_2 = 310 \text{ cc}$$

$$T_1 = 27^{\circ} + 273 = 300 \text{ k}$$
  $T_2 = ?$ 

Moles are constant

$$PV = nRT$$

$$\begin{split} \frac{P_1 V_1}{R T_1} &= n = \frac{P_2 V_2}{R T_2} \\ \frac{P_1 V_1}{T_1} &= \frac{P_2 V_2}{T_2} \\ \frac{620 \times 300}{300} &= \frac{640 \times 310}{T_2} \end{split}$$

$$T_2 = \frac{640 \times 310}{620}$$

$$= 320 k$$

#### 60. Ans (1)

For isothermal reversible compression

$$\Delta E = 0$$
, q + w

$$w = -q$$

q = -208J (Heat released so -ve)

$$w = +208J$$

(Compression so work done on the system +ve)

## 61. Ans (2)

#### 62. Ans (4)



#### 63. Ans (3)

CH<sub>3</sub>-CH<sub>2</sub>-CH<sub>3</sub> CH<sub>3</sub>-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>3</sub>

Propane Butane

CH<sub>3</sub>

CH<sub>3</sub>

CH<sub>3</sub>-CH-CH<sub>3</sub> CH<sub>3</sub>-CH<sub>3</sub>

Iso butane

Ethane

64. Ans (1) SN<sup>2</sup> rate ∝ less streic crowding

65. Ans (3)
Find R & S
Enantiomer had opposite R, S.

66. Ans (3)

$$CH_{3}$$
- $CH_{2}$ - $CH_{2}$ - $O$ - $CH_{2}$ - $CH$ - $CH_{3}$ 
 $CH_{3}$ 

1-propoxy-2-methyl propane

### 67. Ans (1)

$$\begin{array}{c|c}
OH & OH & OH \\
\hline
\begin{array}{c}
Cl_2 \\
\hline
\end{array}
\end{array}$$

$$\begin{array}{c|c}
CH \\
\hline
\end{array}$$

$$\begin{array}{c}
CH \\
CN \\
\end{array}$$

$$\begin{array}{c}
OH \\
CN \\
\end{array}$$

$$\begin{array}{c}
OH \\
COOH \\
\end{array}$$

$$\begin{array}{c}
COOH \\
\hline
\end{array}$$

$$\begin{array}{c}
CT_2O_7 \\
\hline
\end{array}$$

$$\begin{array}{c}
H^{\dagger}
\end{array}$$

**68. Ans (1)** Soframicine is antiseptic.

#### 69. Ans (1)

$$Br \xrightarrow{NH_2} Br \xrightarrow{NaNO_2 \atop O-5^{\circ}C} Br \xrightarrow{N_2CI} Br \xrightarrow{H_3PO_2 \atop Reduction} Br \xrightarrow{Br} Br$$

## 70. Ans (4)

 $3^{\circ}$  Amine is most sterically crowded does not able to form H-bonding that's why lesat basic order of boiling point for isomeric anines is  $1^{\circ}$   $> 2^{\circ} > 3^{\circ}$  due to H-bonding

### 71. Ans (2)

 $\pi e^-$  density is identified by resonating structure.

-ve charge is at 2 and 4 position. So  $C_2$  and  $C_4$  have highest electron density.

## 72. Ans (3)

Due to equivalent resonating structure formed by acetate ion it is more stable than phenoxide ion which form non equivalent resonating structure.

$$CH_{3}-C-O \longleftrightarrow CH_{3}-C=O$$

$$2 \text{ Equivalent R.S}$$

$$CH_{3}-C-O \longleftrightarrow CH_{3}-C=O$$

$$2 \text{ Equivalent R.S}$$

#### 73. Ans (4)

According to CIP priority is assigned according to atomic number of directly attached atom  $-\mathrm{OH} > -\mathrm{COOH} > -\mathrm{CH} - \mathrm{CH}_3 > \mathrm{CH}_2\mathrm{OH}$ 

Non equivalent R.S

#### 74. Ans (2)

ESR ∝ electron density of benzene

∝ Resonance

#### 75. Ans (4)

Reactivity of alcohol with HBr  $\propto$  stability of carbcation.

#### 76. Ans (2)

When CO<sub>2</sub> is passed through brine solution saturated with NH<sub>3</sub>, it gives sodium bicarbonate which on drying and heating gives sodium carbonate.



## 77. Ans (4)

(1)  $Zn(NH_3)_2Cl_2 \rightarrow Tetrahedral$ 

(4)  $[Cr(H_2O)_3Cl_3] \rightarrow Ma_3b_3$  shows 2 GI (fac-Mer)

#### 79. Ans (4)

$$Na(s) + \frac{1}{2}Cl_{2}(g) \xrightarrow{\Delta H} NaCl(s)$$

$$\downarrow^{\Delta H_{sub}} \qquad \downarrow^{\frac{1}{2}\Delta H_{BDE}}$$

$$Na(g) \qquad Cl(g)$$

$$\downarrow^{\Delta H_{IE}} \qquad \downarrow^{\Delta H_{EG}}$$

$$Na^{+}(g) + Cl^{-}(g)$$

80. Ans (1)  $CaOCl_2 \longrightarrow CaCl_2 + [O]$ 

81. Ans (1)  $I.E. \propto Z_{eff}$   $O^{+} > F^{+} > N^{+} > C^{+}$   $2s^{2}2p^{3} 2s^{2}2p^{4} 2s^{2}2p^{2} 2s^{2}2p^{1}$ 

#### 82. Ans (4)

 $H_2Se$  and  $H_2S$  are polar, but molecular weight of  $H_2Se$  is higher so higher dispersion forces in  $H_2Se$ .

83. Ans (2)  $H_2SO_4 + PbO_2 \longrightarrow PbSO_4 + \frac{1}{2}O_2 + H_2O_3$ 

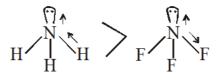
84. Ans (2)

 $K_3[\text{Co(CO}_3)_3] \Rightarrow \text{Co}^{3+}(d^6) \text{ (WFL)} \Rightarrow \text{sp}^3 d^2$ octahedral no. of unpaired electron = 4  $\mu = \sqrt{n(n+2)} = \sqrt{4(4+2)} = 4.9 \text{ BM}$ 

## 86. Ans (2)

(1) BF<sub>3</sub> and CCl<sub>4</sub>  $\rightarrow$  Dipole moment = 0

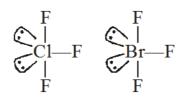
(2) NH<sub>3</sub> and NF<sub>3</sub>  $\rightarrow$  Non-zero dipole moment



87. Ans (3)

$$\begin{split} &Solubility: MgSO_4 > CaSO_4 > SrSO_4 > BaSO_4 \\ &Stability: BeCO_3 < MgCO_3 < CaCO_3 < SrCO_3 \\ &Bond\ energy - Cl_2 > Br_2 > F_2 > I_2 \end{split}$$

88. Ans (2)



89. Ans (4)

All d-block elements are transition elements except Zn, Cd and Hg due their full filled electronic configuration in ground state as well as stable oxidation state.

90. Ans (1)

CuO, Cu<sub>2</sub>O and CuSO<sub>4</sub> gives Cu and SO<sub>2</sub> on heating with Cu<sub>2</sub>S during Bessemerisation.

95. Ans (3) NCERT Pg # 117

101. Ans (1) NCERT (XII) Pg # 30(E), 32(H)

**105. Ans ( 3 )** NCERT (XI) Pg # 265

**107. Ans (1)** NCERT (XI) Pg. # 272, I<sup>st</sup> para

111. Ans (2) NCERT XI, Page # 294



112. Ans (2) NCERT (XIth) (E), Para-6, Pg. # 297

113. Ans (2) NCERT Pg # 84, 85

115. Ans (3) NCERT-XI Page No. 72

**118. Ans (4)** NCERT XII<sup>th</sup>, Pg. no # 147

**123. Ans (4)** NCERT (E) Pg. # 322

129. Ans (2) NCERT Pg. # 49

**130. Ans (4)** NCERT- Pg # 56, Para- 4.2.11.2, Fig # 4.19 (a)

**132. Ans ( 3 )** NCERT XI, Pg. # 132, Para-04

**140. Ans ( 2 )** NCERT XII Pg.# 177 (E), 193 (H)

**142. Ans (1)** NCERT Pg. # 6

145. Ans (2) NCERT-XI, Pg # 31, Fig.3.1(a-i) & (b-ii)

**147. Ans (1)** NCERT-XI Pg # 36

**151. Ans (1)** NCERT-XI Pg. # 145

**154. Ans (4)** NCERT Pg. # 133

**160. Ans (3)** NCERT XI Pg # 101

**164. Ans (2)** NCERT Pg. # 188

**171. Ans ( 2 )** NCERT-XIth Pg# 250,251

177. Ans (3) NCERT Pg # 266

178. Ans (3) NCERT- Pg. # 280, 282, 283