

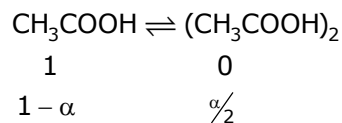
# JEE MAIN-2017 CHEMISTRY Code-C Solution

1. (1)

$$\Delta T_f = K_f m_i$$

$$0.45 = 5.12 \times m \times i$$

$$i = 0.527$$



$$0.45 = i (5.12) \frac{0.2 / 60}{20} \times 1000$$

$$i = 1 - \frac{\alpha}{2}; \quad 0.527 = 1 - 2 - \frac{\alpha}{2}$$

$$\frac{\alpha}{2} = 0.473; \quad \alpha = 0.946$$

% association = 94.6%

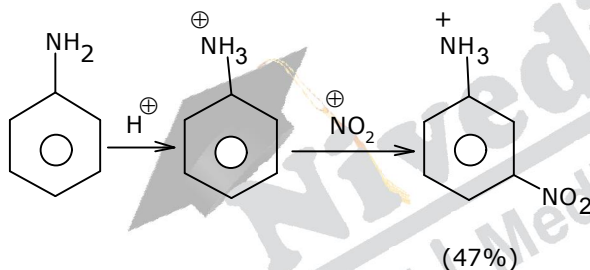
2. (1)

$$\text{millimoles of AgNO}_3 = \frac{1.2 \times 10^{22}}{6 \times 10^{23}} \times 1000 = 20$$

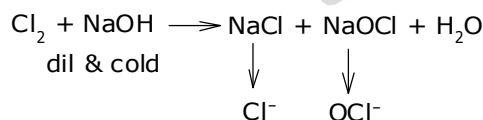
$$\text{millimoles of CoCl}_2 \cdot 6\text{H}_2\text{O} = 0.1 \times 100 = 10$$

Each mole of  $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$  gives two chloride ions.

3. (4)



4. (4)



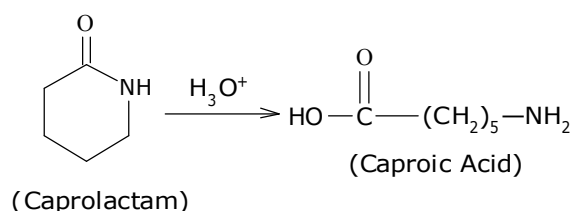
5. (2)

Mg form basic carbonate But Li does not form

6. (4)

Permissible limit of  $\text{F}^-$  in drinking water is up to 2 ppm. Excess conc. harmful (decay of bones)

7. (2)



(Caprolactam)

8. (3)

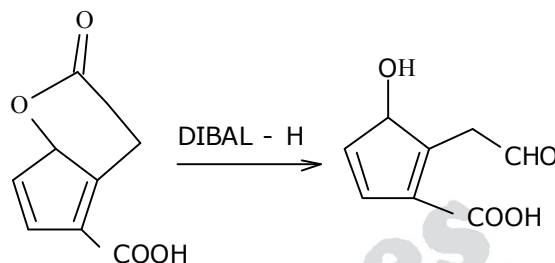
Refractive index of dispersion phase and dispersion medium must differ significantly.

9. (3)

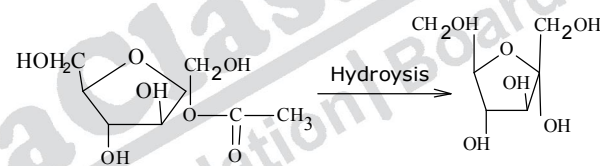
$$\text{pH} = 7 + \frac{1}{2} (\text{pK}_a - \text{pK}_b) = 7 + \frac{1}{2} (3.2 - 3.4) = 6.9$$

10. (2)

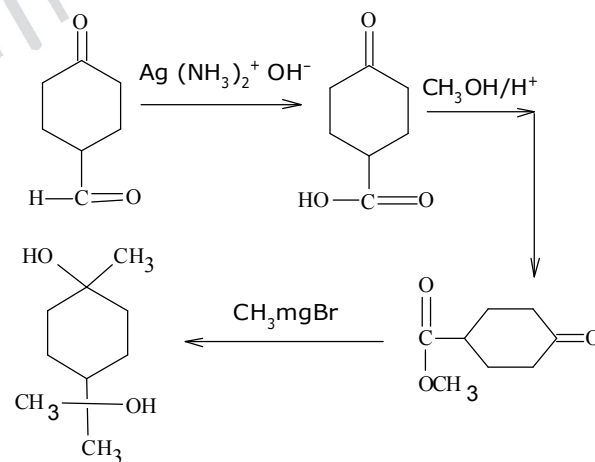
DIBAL - H reduces esters into aldehyde and alcohol



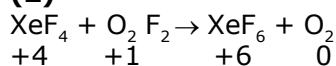
11. (2)



12. (2)



15. (2)



16. (4)

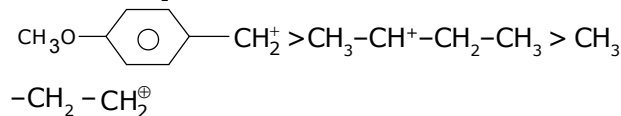
Adiabatic process  $q = 0$   
 $\Delta U = W$

17. (1)

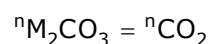
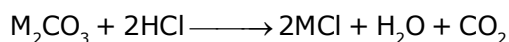
It is non-benzonide resonance

18. (3)

Rate of  $\text{SN}_1 \propto$  stability of carbocation



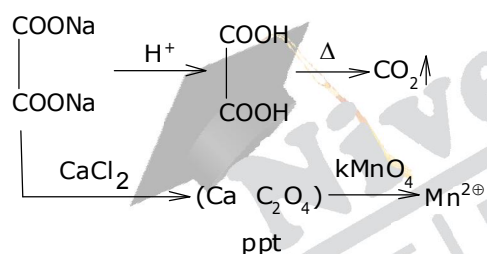
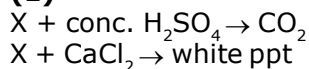
19. (3)



$$\frac{1}{M_{\text{M}_2\text{CO}_3}} = 0.01186$$

$$M_{\text{M}_2\text{CO}_3} = \frac{1}{0.01186} = 84.3 \text{ g/mol}$$

20. (1)



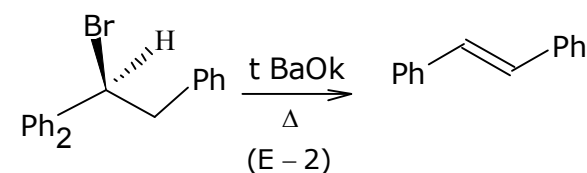
21. (4)

$$\text{mass of Hydrogen} = \frac{10}{100} \times 75 = 7.5 \text{ kg}$$

Replacing  ${}^1\text{H}$  by  ${}^2\text{H}$  would replace 7.5 kg with 15 kg

Net gain = 7.5 kg

22. (3)



23. (4)

By applying the operation  
(i) + 2 × (ii) + iii we get

$$\Delta_r H^\circ = -393.5 - 285.8 \times 2 + 890.3$$

$$= -74.8 \text{ kJ mol}^{-1}$$

24. (1)

In (a) ZnO acts as acidic oxide because  $\text{Na}_2\text{O}$  is basic oxide (b) ZnO acts as basic oxide because  $\text{CO}_2$  is acidic oxide

25. (1)

$$r = r_0 \frac{n^2}{z} \quad n = 2$$

$$r_0 = 0.53$$

$$r = 0.53 \times \frac{(2)^2}{1} = 2.12 \text{ \AA}$$

26. (1)

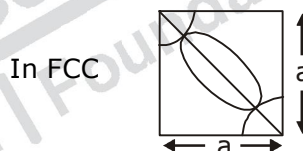
$$k_1 = A e^{-E_{a1}/RT}$$

$$k_2 = A e^{-E_{a2}/RT}$$

$$\frac{k_2}{k_1} = e^{\frac{1}{RT}(E_{a1} - E_{a2})}$$

$$\ln \frac{k_2}{k_1} = \frac{E_{a1} - E_{a2}}{RT} = \frac{10 \times 10^3}{8.314 \times 300} = 4$$

27. (1)



$$r = \frac{1}{\sqrt{2}} a$$

$$\text{closest approach} = 2r = \frac{a}{\sqrt{2}}$$

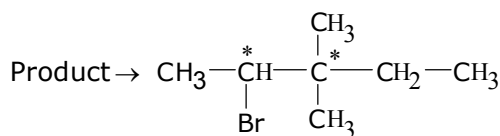
28. (2)

$\text{Mg}^{2+}$ ,  $\text{Na}^+$ ,  $\text{O}^{2-}$ , and  $\text{F}^-$  all have 10 electron each

29. (2)

Negative Reduction potential increases reducing tendency increases.

30. (1)



$$\text{total stereoisomers} = 2^2 = 4$$

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