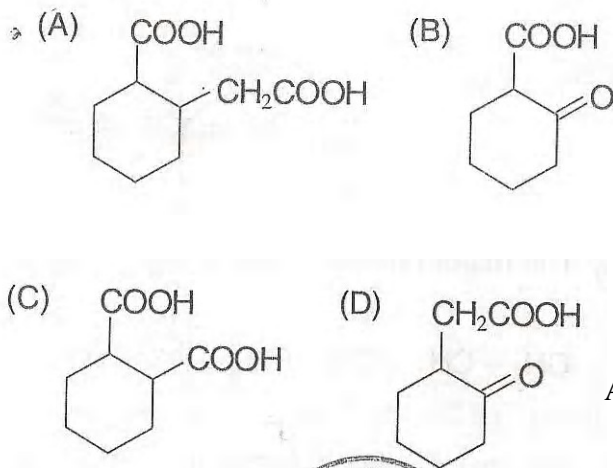


**PAPER - II
CHEMISTRY**

21. The compound that undergoes decarboxylation most readily under mild condition is



ANS.B

22. The shape of XeO_2F_2 molecule is

- (a) trigonal bipyramidal
(b) Square planar
(c) Tetrahedral
(d*) see-saw

23. For a dilute solution containing 2.5 g of a non-volatile non-electrolyte solute in 100 g of water, the elevation in boiling point at 1 atm pressure is $2^\circ C$. Assuming concentration of solute is much lower than the concentration of solvent, the vapour pressure (mm of Hg) of the solution is (take $K_b = 0.76 k kg mol^{-1}$)

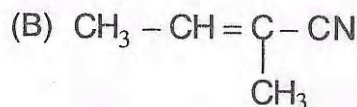
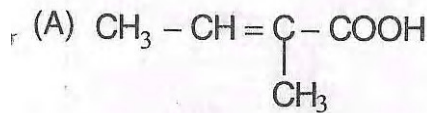
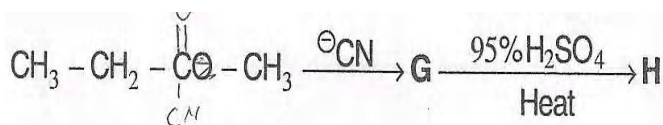
- (a*) 724 (b) 740
(c) 736 (d) 718

24. $NiCl_2 \{ P(C_2H_5)_2 (C_6H_5) \}_2$ exhibits temperature dependent magnetic behaviour (paramagnetic diamagnetic).

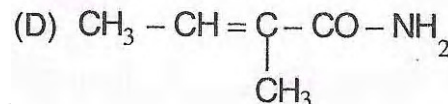
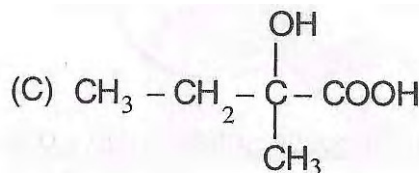
The coordination geometries of Ni^{2+} in the paramagnetic and diamagnetic states are respectively

- (a) tetrahedral and tetrahedral
(b) square planar and square planar
(c*) tetrahedral and square planar
(d) square planar and tetrahedral

25. The Major product H of the given reaction sequence is



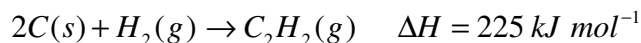
ANS B



26. The reaction of white phosphorus with aqueous NaOH gives phosphine along with another phosphorus containing compound. The reaction type : the oxidation states of phosphorus in phosphine and the other product are respectively (a) redox reaction : -3 and -5

- (b) redox reaction : z=3 and +5
(c*) disproportionation reaction : -3 and +5
(d) disproportionation reaction : -3 and +3

27. Using the data provided, calculate the multiple bond energy ($KJ mol^{-1}$) of a $C \equiv C$ bond in C_2H_2 . That energy is (take the bond energy of a C-H bond as $350 kJ mol^{-1}$)



- (a) 1165 (b) 837 (c) 865 (d*) 815

28. In the cyanide extraction process of silver from argentite ore, the oxidizing and reducing agents used are

- (a) O_2 and CO respectively
(b*) O_2 and Zn dust respectively
(c) HNO_3 and Zn dust respectively
(d) HNO_3 and CO respectively.