

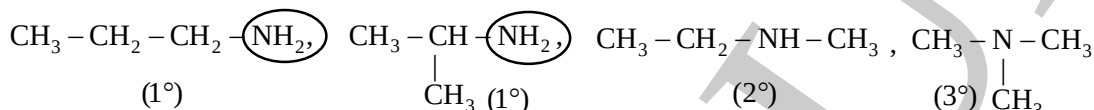
SOLUTION TEST-B

1. Ethylamine, $\text{CH}_3 - \text{CH}_2 - \text{NH}_2$ is primary amine, gives base soluble product with benzene sulphonyl chloride. It also gives foul smelling compound with $\text{CHCl}_3/\text{eth. KOH}$. Dimethyl amine, $(\text{CH}_3)_2\text{NH}$ is a secondary amine, gives base insoluble product with benzene sulphonyl chloride. It does not react with $\text{CHCl}_3/\text{eth. KOH}$.

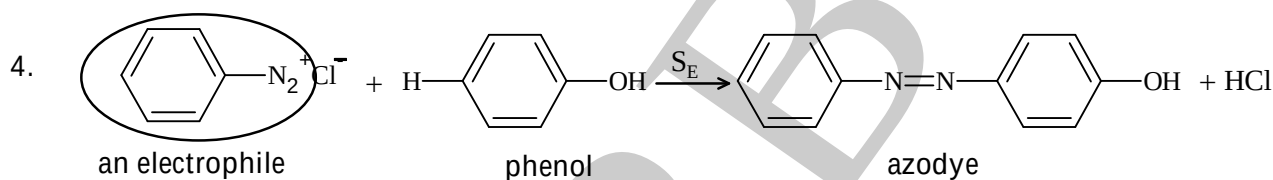
The correct answer is (iii)

2. The correct answer is (iv)

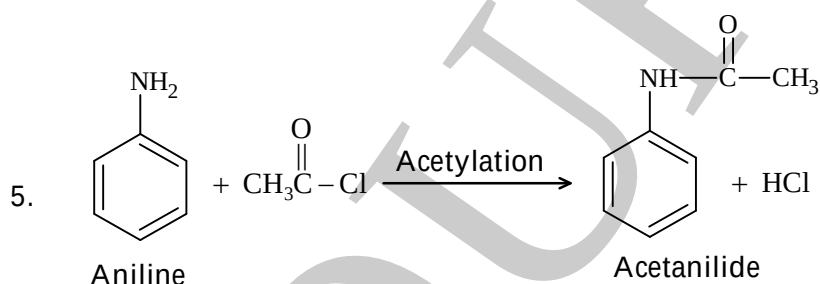
3. Amines containing $-\text{NH}_2$ group (only 1° amine) bonded to alkyl group liberates N_2 gas with NaNO_2/HCl .



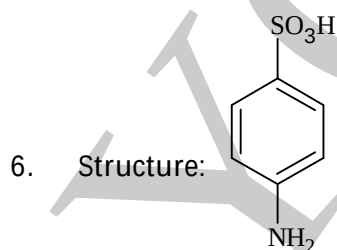
The correct answer is (iii)



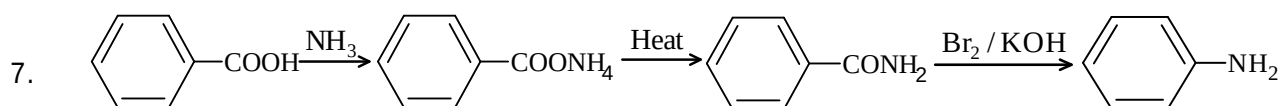
The correct answer is (i)



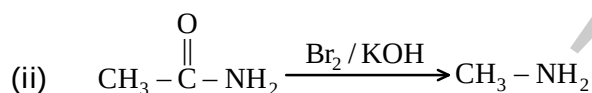
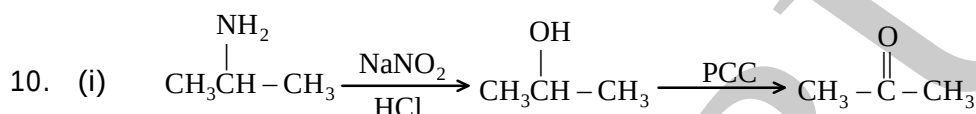
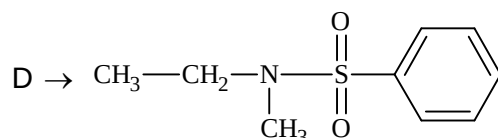
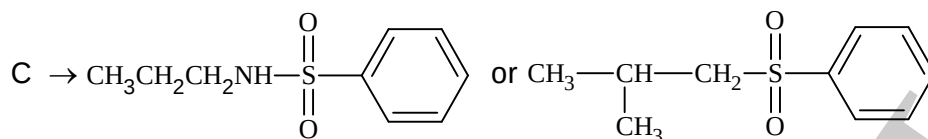
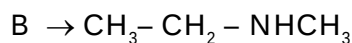
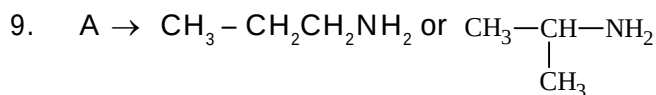
The correct answer is (ii)



IUPAC Name: 4-Aminobenzene sulphonic acid

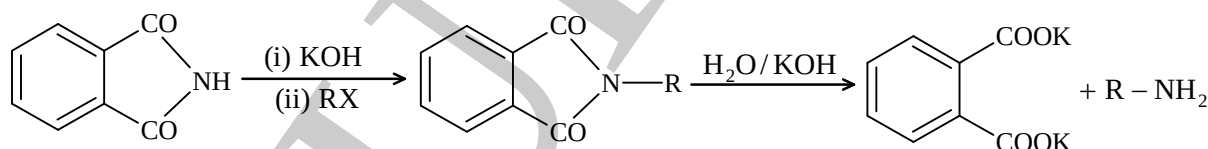


8. (i) $\text{C}_6\text{H}_5\text{NH}_2 < \text{C}_6\text{H}_5\text{CH}_2\text{NH}_2 < \text{CH}_3\text{CH}_2\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH}$
 (ii) $\text{C}_6\text{H}_5\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH} < \text{C}_2\text{H}_5\text{NH}_2 < \text{C}_2\text{H}_5\text{OH}$

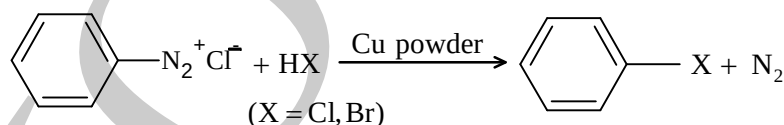


11. (a)

(i) **Gabriel Phthalimide** synthesis is a method to prepare pure primary amines by reacting phthalimide with alkyl halide followed by hydrolysis.

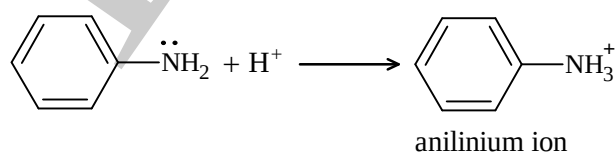


(ii) **Gattermann reaction:** It is a method to prepare chloro and bromo benzene by reacting benzene diazonium chloride with copper powder and HX (where X = Cl, Br)

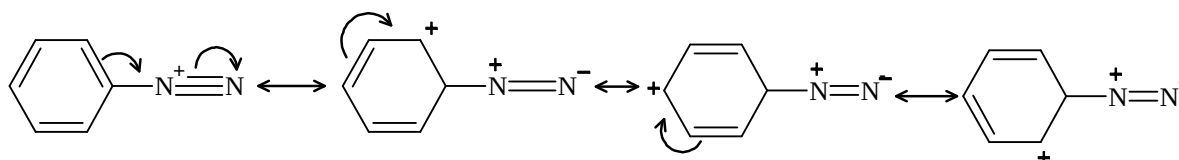


(b) Quaternary ammonium salts are used as cationic detergents.

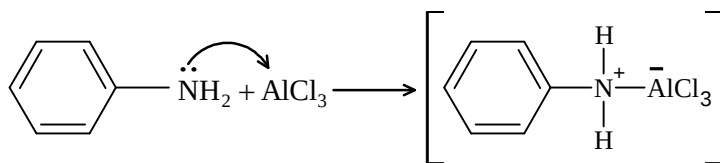
12. (i) On nitration using $\text{HNO}_3/\text{H}_2\text{SO}_4$, aniline gets protonated to form anilinium ion which is meta-directing. Hence, aniline gives a substantial amount of m-nitro aniline.



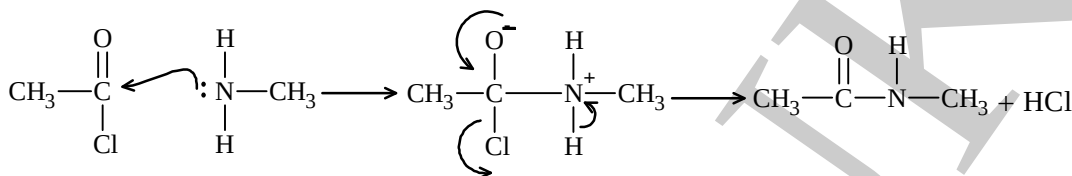
(ii) Diazonium salts of aromatic amines are more stable due to resonance.



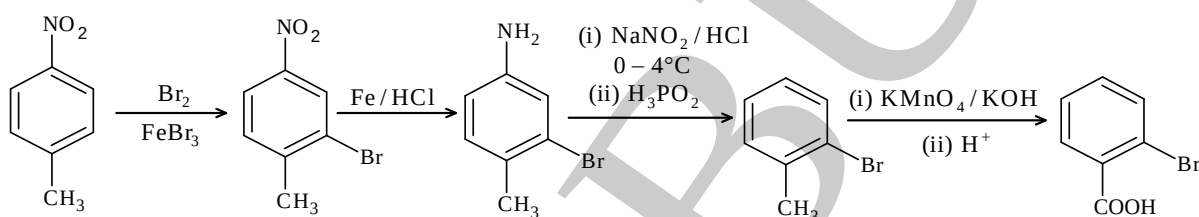
(iii) Aniline is a Lewis base and donates a lone pair of electrons to AlCl_3 (a Lewis acid). As a result, nitrogen acquires a positive charge and the ring gets deactivated. Hence, aniline does not undergo Friedel-Craft's reaction.



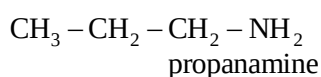
13. (a)



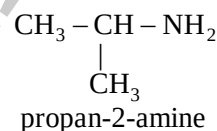
(b)



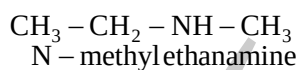
14. (1)



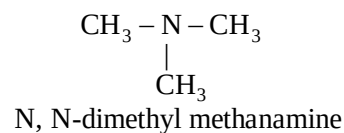
(2)



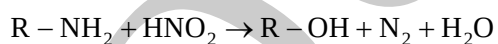
(3)



(4)

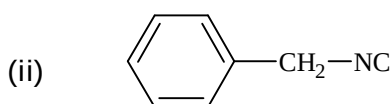
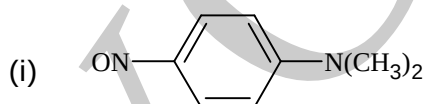


Only primary amine with NH_2 group liberates N_2 gas as reaction with HNO_2 .



Isomers (1) and (2) only liberates N_2 gas on reaction with HNO_2 .

15. (a)



(b)

