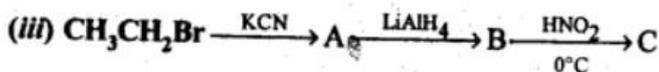
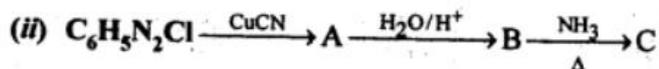
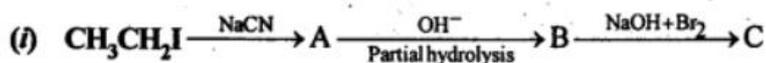




Test Paper Class-12 | Chapter– Amines & Solution | Marks 35 | Time- 1.5 h

- 1 Aniline is less basic than: 1
- a) Triphenylamine
 - b) Benzylamine
 - c) Diphenylamine
 - d) p-nitroaniline
- 2 Which one of the following is the product that is formed when a primary amine reacts with chloroform in alcoholic KOH? 1
- a) An isocyanide
 - b) An alcohol
 - c) An Aldehyde
 - d) Cyanide
- 3 The product obtained when methylamine (CH_3NH_2) is treated with nitrous acid is: 1
- a) CH_3OH
 - b) CH_3CH_2
 - c) CH_3OCH_3
 - d) Both b & c
- 4 Which one of the following between these compounds has the lowest Boiling rate? 1
- a) Aniline
 - b) Butyl amine
 - c) Diethylamine
 - d) Propyl amine
- 5 Which one of the following is formed in the reaction of an aldehyde with a primary amine? 1
- a) Carboxylic acid
 - b) Aromatic Acid
 - c) Schiff's base
 - d) Ketone
- 6 Write the equations involved in the following reactions: 2
- (i) Coupling reaction
 - (ii) Carbylamine reaction
- 7 Predict the products of the following reactions: 3



- 8 Give plausible explanation for each of the following: 3
- (i) Why are amines less acidic than alcohols of comparable molecular masses?
- (ii) Why do primary amines have higher boiling point than tertiary amines?
- (iii) Why are aliphatic amines stronger bases than aromatic amines?
- 9 Give one chemical test to distinguish between the following pairs of compounds: 3
- (i) Methylamine and dimethylamine
- (ii) Secondary and tertiary amines
- (iii) Ethylamine and aniline
- 10 Arrange the following in increasing order of their basic strength: 3
- (i) $\text{C}_2\text{H}_5\text{NH}_2$, $\text{C}_6\text{H}_5\text{NH}_2$, NH_3 , $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2$, $(\text{C}_2\text{H}_5)_2\text{NH}$
- (ii) $\text{C}_2\text{H}_5\text{NH}_2$, $(\text{C}_2\text{H}_5)_2\text{NH}$, $(\text{C}_2\text{H}_5)_3\text{N}$, $\text{C}_6\text{H}_5\text{NH}_2$
- (iii) CH_3NH_2 , $(\text{CH}_3)_2\text{NH}$, $(\text{CH}_3)_3\text{N}$, $\text{C}_6\text{H}_5\text{NH}_2$, $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2$
- 11 Calculate the mass of ascorbic acid (vitamin C, $\text{C}_6\text{H}_8\text{O}_6$) to be dissolved in 75 g of acetic acid to lower its melting point by 1.5°C . (K_f for CH_3COOH) = $3.9 \text{ K kg mol}^{-1}$) 2
- 12 According to Raoult's law, what is meant by positive and negative deviations and how is the sign of $\Delta_{\text{sol}}H$ related to positive and negative deviations from Raoult's law? 2
- 13 Calculate the mass of a non-volatile solute (molecular mass 40 g mol^{-1}) that should be dissolved in 114 g of octane to reduce its pressure to 80%. 2
- 14 A 5% solution (by mass) of cane sugar in water has freezing point of 271 K. Calculate the freezing point of 5% glucose in water if freezing point of pure water is 273.15 K. 2
- 15 a) Define 4
 b) Azeotropic Mixture
 c) Osmotic Pressure
 d) Henry's Law

Assertion And Reasoning



Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

- 1 Assertion: Acylation of amines gives a mono-substituted product whereas alkylation of amines gives a poly-substituted product. Reason: Acyl group sterically hinders the approach of further acyl groups. 1
- 2 Assertion: Hoffmann's bromamide reaction is given by primary amines. Reason: Primary amines are more basic than secondary amines. 1
- 3 **Assertion:** Molality is a better method to express concentration than molarity
Reason: Molality is defined in terms of mass of solvent and not mass of solution. 1
- 4 **Assertion:** Soda bottles are sealed under high pressure.
Reason: High pressure increases the solubility of carbon dioxide gas. 1

Chemistry for all