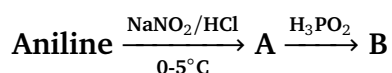




General Instructions

- (i) The examination will be conducted in Computer-Based Test (CBT) mode.
- (ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.
- (iii) The total number of questions are 50.
- (iv) Duration of the exam is 1 hour (60 minutes).

1. Aniline is converted into benzene by the following sequence of reactions:



The compounds A and B respectively are:

- (A) Benzene diazonium chloride, Benzene
- (B) Nitrobenzene, Benzene
- (C) Benzene diazonium chloride, Phenol
- (D) Chlorobenzene, Benzene

2. Among the following compounds, the correct order of acidic strength is:

Phenol, p-Nitrophenol, p-Methoxyphenol

- (A) p-Methoxyphenol > Phenol > p-Nitrophenol
- (B) p-Nitrophenol > Phenol > p-Methoxyphenol
- (C) Phenol > p-Nitrophenol > p-Methoxyphenol

(D) p-Nitrophenol > p-Methoxyphenol > Phenol

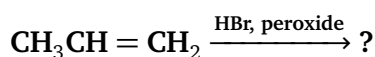
(A) p-Methoxyphenol > Phenol > p-Nitrophenol

(B) p-Nitrophenol > Phenol > p-Methoxyphenol

(C) Phenol > p-Nitrophenol > p-Methoxyphenol

(D) p-Nitrophenol > p-Methoxyphenol > Phenol

3. The major product formed in the following reaction is:



(A) $\text{CH}_3\text{CHBrCH}_3$

(B) $\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}$

(C) $\text{CH}_2\text{BrCH}=\text{CH}_2$

(D) $\text{CH}_3\text{CHBrCH}_2\text{Br}$

4. The SI unit of rate constant for a first order reaction is:

(A) $\text{mol L}^{-1}\text{s}^{-1}$

(B) s^{-1}

(C) $\text{L mol}^{-1}\text{s}^{-1}$

(D) $\text{mol}^{-1}\text{L s}^{-1}$

5. Which of the following complexes shows maximum number of unpaired electrons?

(A) $[\text{Fe}(\text{CN})_6]^{4-}$

(B) $[\text{FeF}_6]^{3-}$

(C) $[\text{Co}(\text{NH}_3)_6]^{3+}$

(D) $[\text{Ni}(\text{CO})_4]$

6. The correct increasing order of basic strength of the following amines/compounds is:

(I) $\text{C}_6\text{H}_5\text{NH}_2$ (Aniline)

(II) NH_3 (Ammonia)

(III) $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2$ (Benzylamine)

(IV) $\text{C}_2\text{H}_5\text{NH}_2$ (Ethylamine)

(V) $(\text{C}_2\text{H}_5)_2\text{NH}$ (Diethylamine)

(A) $\text{C}_6\text{H}_5\text{NH}_2 < \text{NH}_3 < \text{C}_6\text{H}_5\text{CH}_2\text{NH}_2 < \text{C}_2\text{H}_5\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH}$

(B) $\text{NH}_3 < \text{C}_6\text{H}_5\text{NH}_2 < \text{C}_6\text{H}_5\text{CH}_2\text{NH}_2 < \text{C}_2\text{H}_5\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH}$

(C) $\text{C}_6\text{H}_5\text{CH}_2\text{NH}_2 < \text{C}_6\text{H}_5\text{NH}_2 < \text{NH}_3 < \text{C}_2\text{H}_5\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH}$

(D) $\text{C}_2\text{H}_5\text{NH}_2 < (\text{C}_2\text{H}_5)_2\text{NH} < \text{C}_6\text{H}_5\text{NH}_2 < \text{NH}_3$

7. When blood cells are placed in 1% (w/v) NaCl aqueous solution, what will happen to the cells?

(A) Cell will burst

(B) Cell will shrink

(C) Cell will swell

(D) Cell remains as such

8. Which of the following solutions is isotonic with human blood?

(A) 0.1% NaCl solution

(B) 0.5% NaCl solution

(C) 0.9% NaCl solution

(D) 2% NaCl solution

9. Which of the following compounds will not undergo an Azo coupling reaction?

(A) Aniline

(B) Phenol

(C) Anisole

(D) Nitrobenzene

10. Which of the following are fat soluble vitamins?

(A) Vitamin A

(B) Vitamin B

(C) Vitamin D

(D) Vitamin E

(E) Vitamin K

Choose the correct answer from the options given below:

(A) (A), (B), (D) and (E) only

(B) (A), (B), (C) and (D) only

(C) (A), (C), (D) and (E) only

(D) (B), (C), (D) and (E) only
