REDUCTION

- 1. Which of the following compounds produces an optically inactive compound on hydrogenation?
 - (1) H CH₃
- (2) H_CH₃
- (3) H CH₃
- (4) H_CH₃
- 2. The major product [R] in the following sequence of reactions is:-
 - $HC = CH \xrightarrow{\text{(i) LiNH}_2/\text{ether}} [P]$ $(CH_3)_2 CH = Br$
 - $\frac{\text{(i) HgSO}_4/\text{H}_2\text{SO}_4}{\text{(ii) NaBH}_4} \rightarrow [Q] \xrightarrow{\text{Conc.H}_2\text{SO}_4} \rightarrow [R]$
 - (1) C=CH-CH₃ (CH₃),CH
 - (2) H_3C $C=C(CH_3)_2$ H_3CCH_2
 - (3) H₂C C-CH₂-CH₃ CH(CH₃)₂
 - (4) H_3C CH-CH=CH₂ (CH₃)₂CH

- 3. The most appropriate reagent for conversion of C_2H_5CN into $CH_3CH_2CH_2NH_2$ is :
 - (1) Na(CN)BH₃
 - (2) LiAlH₄
 - (3) NaBH₄
 - (4) CaH₂
- 4. The correct match between **Item-I** (starting material) and **Item-II** (reagent) for the preparation of benzaldehyde is:

Item-I

Item-II

(I)Benzene

(P) HCl and SnCl₂, H₃O⁺

(II)Benzonitrile

 $(Q) H_2, Pd-BaSO_4, S$

and quinoline

- (III)Benzoyl Chloride (R)CO, HCl and AlCl₃
- (1) (I)-(Q), (II)-(R) and (III)-(P)
- (2) (I)-(R), (II)-(Q) and (III)-(P)
- (3) (I)-(R), (II)-(P) and (III)-(Q)
- (4) (I)-(P), (II)-(Q) and (III)-(R)

SOLUTION

1. Official Ans. by NTA (2)

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Now :- (i) HgSO₄/dil.H₂SO₄

(ii) NaBH₄

is convert triple bond into ketone and formed ketone is reduced by NaBH₄ and convert into Alcohol.

3. Official Ans. by NTA (2)

Sol.
$$CH_3-CH_2-C\equiv N \xrightarrow{?} CH_3-CH_2-CH_2-NH_2$$

 $CH_3-CH_2-C\equiv N \xrightarrow{LiAlH_4} CH_3-CH_2-CH_2-NH_2$

4. Official Ans. by NTA (3)

(ii)
$$CN$$
 $CH=NH$
 $C-H$

$$CH=NH$$

$$CH=N$$