

20.1 Types of Organic Reactions

Question Paper

Course	DIPB Chemistry
Section	20. Organic Chemistry (HL only)
Topic	20.1 Types of Organic Reactions
Difficulty	Medium

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Which compound will react most readily by an S_N2 mechanism?

- A. $(CH_3)_3CBr$
- B. $CH_3CH_2CH_2CH_2Cl$
- C. $CH_3CH_2CH_2CH_2Br$
- D. $(CH_3)_3CCl$

[1 mark]

Question 2

An alkene, X, undergoes electrophilic addition with hydrogen bromide to form a halogenoalkane, Y, as the minor product.

The halogenoalkane, Y, can react with sodium hydroxide in aqueous conditions to form butan-1-ol.

What is the correct identity of the alkene, X?

- A. 2-methylpropene
- B. But-1-ene
- C. But-2-ene
- D. Pent-1-ene

[1 mark]

Question 3

Benzene can undergo nitration to form nitrobenzene. Which of the following statements is **not** correct?

- A. Concentrated nitric acid acts as a base
- B. A nitronium ion acts as an electrophile
- C. HSO_4^- is produced in the formation of the electrophile
- D. Aluminum chloride is required as a catalyst for the reaction

[1 mark]

Question 4

What is formed when butanone is heated under reflux with a solution of NaBH_4 ?

- A. $\text{CH}_3\text{CH}_2\text{CHCH}_2$
- B. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- C. $\text{CH}_3\text{CHOHCH}_2\text{CH}_3$
- D. $\text{CH}_3\text{CH}_2\text{CH}_2\text{CHO}$

[1 mark]

Question 5

Which solvent is aprotic?

- A. H_2O
- B. $\text{C}_6\text{H}_5\text{CH}_3$
- C. CH_3OH
- D. CH_3NH_2

[1 mark]