

**AS Level Chemistry B**  
**H033/01** Foundations of chemistry

**Question Set 6**

Multiple Choice Questions

1  $\text{CH}_3\text{Cl}$  can be converted to  $\text{CH}_3\text{NH}_2$  in one step. What is correct about this process?

- A The reaction is substitution of  $\text{Cl}$  by  $\text{NH}_3$ .
- B The product is an amide.
- C The reagent is  $\text{NH}_4^+$ .
- D The reagent is a nucleophile.

Your answer

[1]

2 What will react with a phenol?

- A sodium carbonate
- B sodium hydroxide
- C ethanoic acid
- D acidified potassium dichromate

Your answer

[1]

3 Which of these is classified as an elimination reaction?

- A  $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \rightarrow \text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O}$
- B  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O} \rightarrow \text{CuSO}_4 + 5\text{H}_2\text{O}$
- C  $\text{C}_2\text{H}_5\text{OH} \rightarrow \text{C}_2\text{H}_4 + \text{H}_2\text{O}$
- D  $\text{C}_{17}\text{H}_{36} \rightarrow \text{C}_{10}\text{H}_{22} + \text{C}_7\text{H}_{14}$

Your answer

[1]

- 4 Which statement about carboxylic acids is correct?
- A They can be made by oxidising secondary alcohols.
  - B They react with phenols.
  - C They do **not** fizz with sodium carbonate solution.
  - D They form esters when reacted with tertiary alcohols.

Your answer

[1]

- 5 Which reaction will give  $\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$  as a product?
- A Reduction of  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CHO}$
  - B Treatment of  $\text{CH}_2=\text{CHCH}_2\text{CH}_2\text{CH}_3$  with conc sulfuric acid followed by water
  - C Heating  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}=\text{CH}_2$  with steam and phosphoric acid under pressure
  - D Treatment of  $\text{CH}_3\text{CH}=\text{CHCH}_2\text{CH}_3$  with conc sulfuric acid followed by water

Your answer

[1]

- 6 Which statement about the reaction  $\text{RCl} + \text{NH}_3 \rightarrow \text{RNH}_2 + \text{HCl}$  is correct?
- A An amine is formed.
  - B  $\text{RCl}$  is acting as an acid.
  - C The reaction is electrophilic substitution.
  - D An amide is formed.

Your answer

[1]

- 7 Which substance **cannot** be made in a single step from  $\text{C}_2\text{H}_4$ ?
- A  $\text{C}_2\text{H}_5\text{OH}$
  - B  $\text{C}_2\text{H}_5\text{Br}$
  - C  $\text{C}_2\text{H}_6$
  - D  $\text{C}_2\text{H}_5\text{NH}_2$

Your answer

[1]

8 Which substance will **not** give 3-methylpentane when reduced with hydrogen?

- A 2-ethylbut-1-ene
- B 3-methylpent-2-ene
- C 2-methylpent-1-ene
- D 3-methylpent-1-ene

Your answer

[1]

9 What is **not** a reaction of 2-methylpropan-2-ol?

- A Reaction with an acid anhydride to form an ester
- B Oxidation to a ketone
- C Dehydration to an alkene
- D Reaction with HCl to form a haloalkane

Your answer

[1]

**Total Marks for Question Set 6: 9**

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