



**EXAM PAPERS PRACTICE**

Boost your performance and confidence  
with these topic-based exam questions

Practice questions created by actual  
examiners and assessment experts

Detailed mark scheme

Suitable for all boards

Designed to test your ability and  
thoroughly prepare you

2002

**XVIII**

1583

Time allowed  
**10 Minutes**

**Score**

**/9**

**Percentage**

**%**

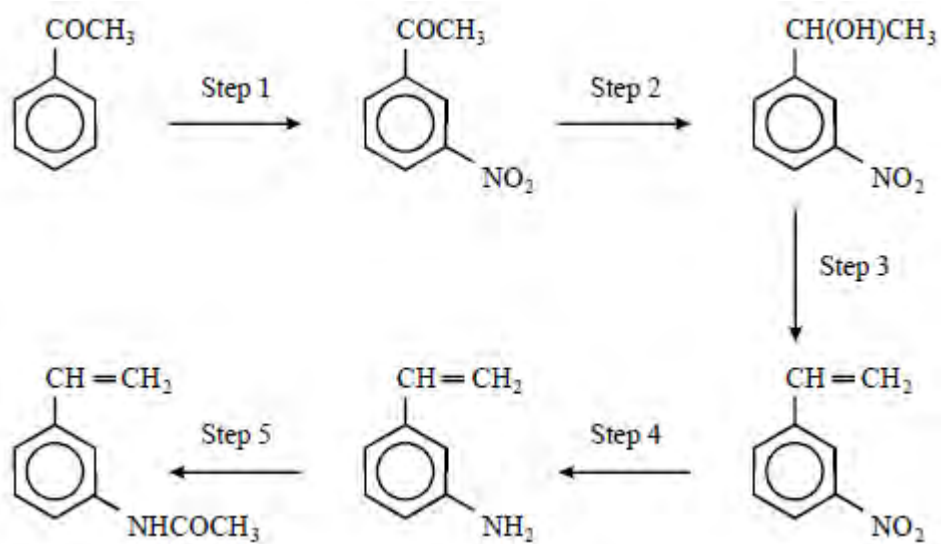
**CHEMISTRY**

**AQA  
AS & A LEVEL**

**Topic Questions**

**3.3 Organic chemistry**

1. Refer to the following reaction sequence:

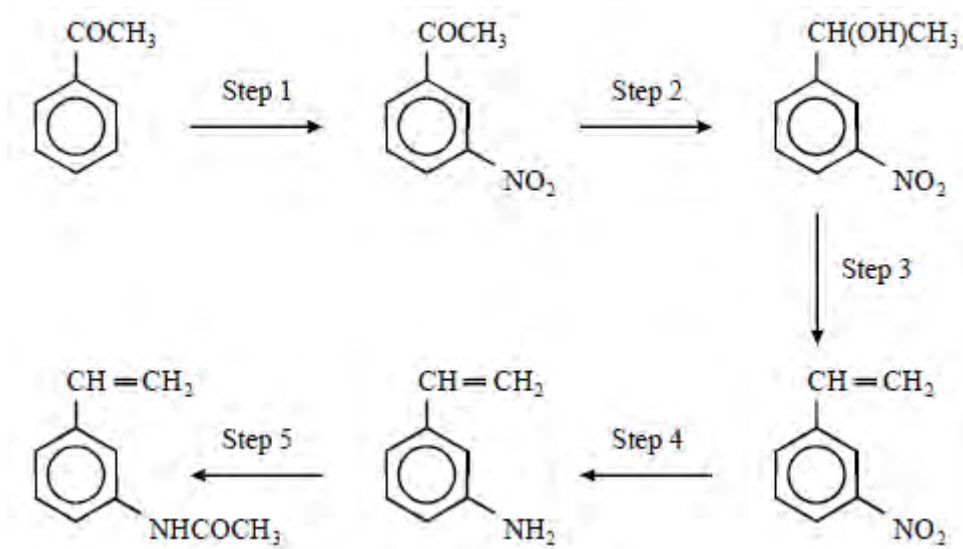


Which one of the following would be the most appropriate to carry out Step 2?

- A  $\text{H}_2 / \text{Ni}$
- B  $\text{Sn} / \text{HCl}$
- C  $\text{NaBH}_4$
- D  $\text{Fe} / \text{HCl}$

(Total 1 mark)

2. Refer to the following reaction sequence:

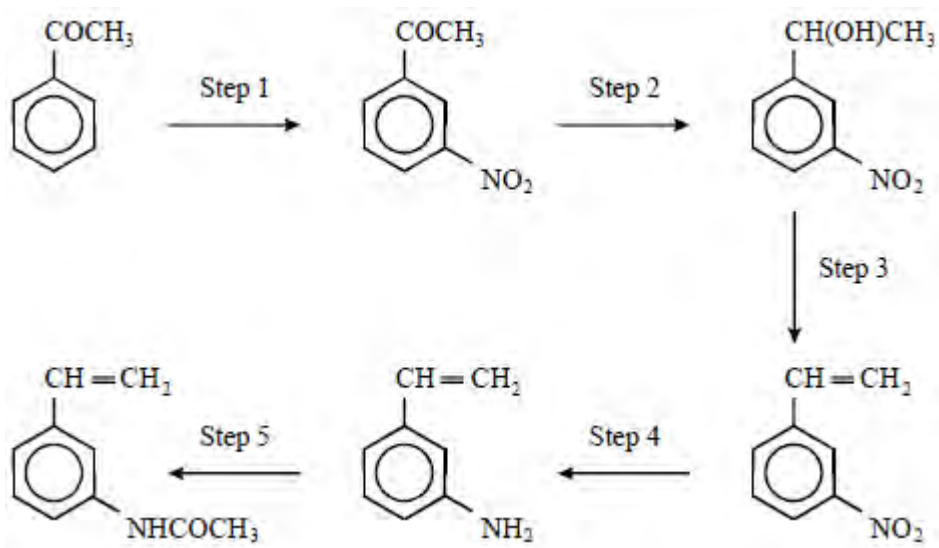


Which one of the following types of reaction mechanism is **not** involved in the above sequence?

- A electrophilic addition
- B electrophilic substitution
- C addition-elimination
- D elimination

(Total 1 mark)

3. Refer to the following reaction sequence:

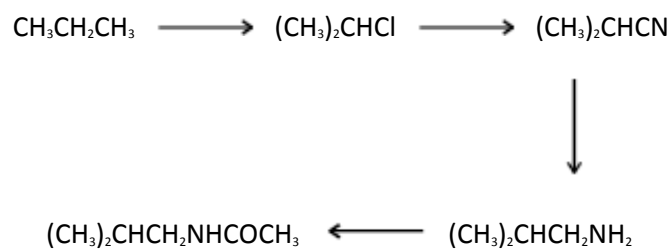


Which one of the following types of reaction is **not** involved in the above sequence?

- A acylation
- B oxidation
- C reduction
- D dehydration

(Total 1 mark)

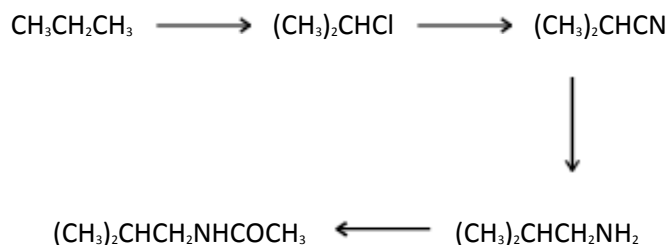
4. Which one of the following types of reaction mechanism is **not** involved in the above sequence?



- A free-radical substitution
- B nucleophilic substitution
- C elimination
- D nucleophilic addition-elimination

(Total 1 mark)

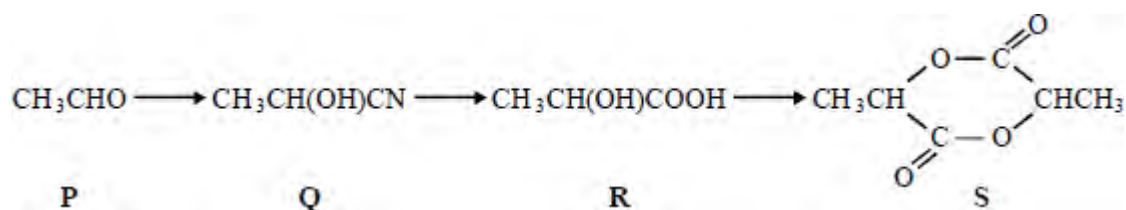
5. Which one of the following types of reaction is **not** involved in the above sequence?



- A halogenation
- B acylation
- C reduction
- D oxidation

(Total 1 mark)

6. This question refers to the reaction sequence below.

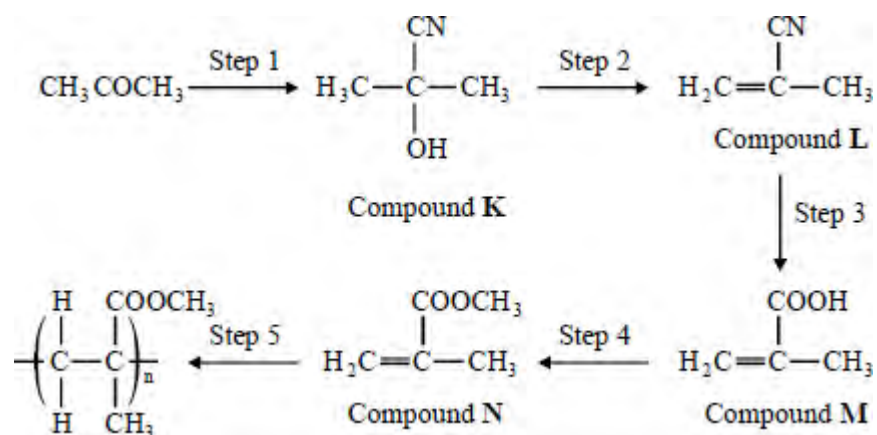


Which one of the following is **not** involved in the reaction sequence?

- A esterification
- B hydrolysis
- C nucleophilic addition
- D reduction

(Total 1 mark)

- 7 This question concerns the preparation of the plastic poly(methyl 2-methylpropenoate) (*Perspex*), starting from propanone.



Which one of the following sets of reagents is **not** suitable for the step indicated?

- A Step 1 HCN (NaCN then dilute HCl)
- B Step 2 hot ethanolic KOH
- C Step 3 warm aqueous  $\text{H}_2\text{SO}_4$
- D Step 4  $\text{CH}_3\text{OH}$  with an acid catalyst

(Total 1 mark)

8. Which one of the following pairs reacts to form an organic product with only 2 singlets in its proton n.m.r. spectrum?

- A ethene and bromine
- B propan-2-ol and acidified potassium dichromate(VI)
- C ethanol and concentrated sulphuric acid
- D epoxyethane and water in the presence of dilute sulphuric acid

(Total 1 mark)

9. Which one of the following pairs of reagents reacts to form an organic product that shows only 2 peaks in its proton n.m.r. spectrum?

- A butan-2-ol and acidified potassium dichromate(VI)
- B ethanoyl chloride and methanol
- C propanoic acid and ethanol in the presence of concentrated sulphuric acid
- D ethene and hydrogen in the presence of nickel

(Total 1 mark)