

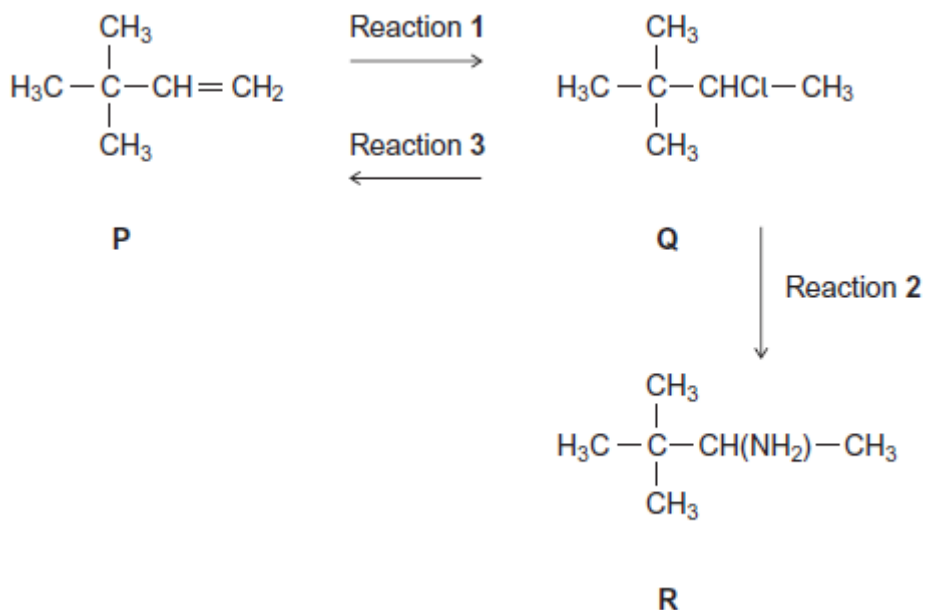
Name of the Student: _____

Max. Marks : 19 Marks

Time : 19 Minutes

Q1.

Consider the following scheme of reactions.



- (a) Give the IUPAC name for compound
- P**
- and that for compound
- Q**
- .

P _____**Q** _____

(2)

- (b) The conversion of
- P**
- into
- Q**
- in Reaction 1 uses HCl

Name and outline a mechanism for this reaction.

(5)

- (c) The conversion of
- Q**
- into
- R**
- in Reaction 2 uses
- NH_3

Name and outline a mechanism for this reaction.

(5)

- (d) State the type of reaction shown by Reaction 3.

Identify a reagent for this reaction.

Give **one** condition necessary for a high yield of product when **Q** is converted into **P**.

(3)

- (e) Hydrogen bromide (HBr) could be used in the overall conversion of **P** into **R**, instead of using HCl

Hydrogen bromide is made by the reaction of NaBr with concentrated phosphoric acid.
Concentrated sulfuric acid is **not** used to make HBr from NaBr

Write an equation for the reaction of NaBr with H_3PO_4 to produce HBr and Na_3PO_4 only.

Identify **two** toxic gases that are formed, together with HBr, when NaBr reacts with concentrated H_2SO_4

State the role of H_2SO_4 in the formation of these two toxic gases.

(4)

(Total 19 marks)