

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Q1.

(a) One of the isomers in part (a) is resistant to oxidation by acidified potassium dichromate(VI).

(i) Identify this isomer.

(ii) This isomer can be dehydrated. Give a suitable dehydrating agent and write an equation for this dehydration reaction.

Dehydrating agent _____

Equation _____

(3)

(b) (i) Identify the isomer in part (a) which can be oxidised to a ketone. Give the structure of the ketone formed.

Isomer _____

Structure of the ketone _____

(ii) Identify **one** of the isomers in part (a) which can be oxidised to an aldehyde. Give the structure of the aldehyde formed.

Isomer _____

Structure of the aldehyde _____

(iii) Give a reagent that can be used in a test to distinguish between a ketone and an aldehyde. State what you would observe in the test.

Reagent _____

Observation with ketone _____

Observation with aldehyde _____

(7)

- (c) Butan-1-ol can be oxidised to form a carboxylic acid. Using [O] to represent the oxidising agent, write an equation for this reaction and name the product.

Equation _____

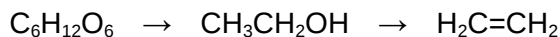
Name of product _____

(2)

(Total 12 marks)

Q2.

Glucose can be used as a source of ethanol. Ethanol can be burned as a fuel or can be converted into ethene.



glucose ethanol ethene

- (a) Name the types of reaction illustrated by the two reactions above.

Glucose to ethanol _____

Ethanol to ethene _____

(2)

- (b) (i) State what must be added to an aqueous solution of glucose so that ethanol is formed.

- (ii) Identify a suitable catalyst for the conversion of ethanol into ethene.

(2)

- (c) (i) State the class of alcohols to which ethanol belongs.

- (ii) Give **one** advantage of using ethanol as a fuel compared with using a petroleum fraction.

(2)

- (d) Most of the ethene used by industry is produced when ethane is heated to 900°C in the absence of air. Write an equation for this reaction.

(1)

- (e) Name the type of polymerisation which occurs when ethene is converted into poly(ethene).

(1)

(Total 8 marks)