CHEMISTRY ONLINE
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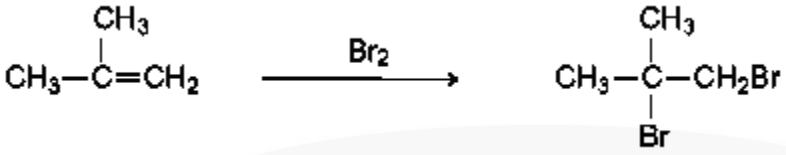
CHEMISTRY

ORGANIC CHEMISTRY

Level & Board	AQA (A-LEVEL)
TOPIC:	ALKENES
PAPER TYPE:	QUESTION PAPER - 3
TOTAL QUESTIONS	10
TOTAL MARKS	32

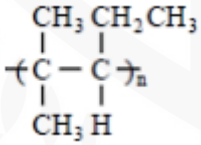
Alkenes - 3

1. Name and outline a mechanism for the following conversion.



(5)

2. The correct name for the alkene monomer which forms the polymer shown below is



A. 2-methyl-3-ethylpropene
B. 2-methylpent-2-ene
C. 2-methylpent-3-ene
D. 4-methylpent-2-ene

(1)

3. When 2-bromopentane reacts with ethanolic KOH, two structurally isomeric alkenes are formed.

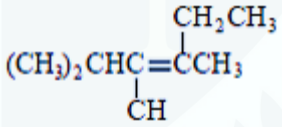
(a) Name and outline a mechanism for the conversion of 2-bromopentane into pent-2-ene as shown below.

$$CH_3CH_2CH_2CHBrCH_3 \xrightarrow{\text{ethanolic KOH}} CH_3CH_2CH{=}CHCH_3$$

(4)

(b) Draw the structure of the other structurally isomeric alkene produced when 2-bromopentane reacts with ethanolic KOH.

(1)

4. The correct systematic name for  is

A. 2-ethyl-3,4-dimethylpent-2-ene
B. 4-ethyl-2,3-dimethylpent-3-ene
C. 2,3,4-trirnethylhex-3-ene
D. 3,4,5-trimethylhex-3-ene

(1)

5. In the manufacture of margarine, unsaturated vegetable oils such as sunflower oil are hardened.

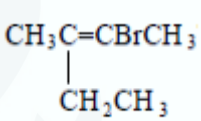
(a) State the reagent and conditions used in this process.

(2)

(b) Soft and hard margarines are obtained from the same vegetable oil.

How does the structure and the melting point of a soft margarine differ from that of a hard one?

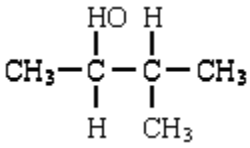
(4)

6. Which one of the following is the correct name for  ?

A. 2-bromo-3-methylpent-2-ene
B. 2-bromo-3-ethylbut-2-ene
C. 3-bromo-2-ethylbut-2-ene
D. 4-bromo-3-methylpent-3-ene

(1)

7. In the presence of reagent X, the alcohol shown below undergoes a reaction to form two isomeric alkenes.



(a) Name this alcohol.

(1)

(b) Give the name of the type of reaction involved in the formation of the two alkenes.

(1)

(c) Suggest the identity of reagent X.

(2)

(d) Give the structural formulae of the two isomeric alkenes.

(2)

8. Which alkene reacts with hydrogen bromide to give 2-bromo-3-methylbutane as the major product?

A. $(CH_3)_2C=CHCH_3$
B. $CH_3CH_2CH=CHCH_3$
C. $CH_3CH_2C(CH_3)=CH_2$
D. $(CH_3)_2CHCH=CH_2$

(1)

9. Outline the mechanism for the electrophilic addition of bromine to propene.
Give the name of the product formed.

(5)

10. Which statement is not correct about $CH_2{=}C(CH_3)CH_2Br$?

A. It displays E-Z isomerism
B. It forms an addition polymer
C. It reacts with electrophiles
D. It decolourises bromine water.

(1)

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