

NAME _____	Class	Index No	

SCIENCE (CHEMISTRY)

Topical Revision – Organic Chemistry

5086/5088

30 minutes

Candidates answer on the Question Paper.
Additional Materials: Periodic Table, Data Sheet

Date: _____

READ THESE INSTRUCTIONS FIRST

Write your class, index number and name on **ALL** the work you hand in
You may use a HB pencil for any drawing.
Write in dark blue or black pen.
Do not use staples, paper clips, glue or correction fluid.

Section A – Multiple Choice Questions (5 marks)

There are 15 questions in this Section. Answer **ALL** questions. For each question, there are four possible answers **A, B, C** and **D**.

Choose the one you consider correct and write your answer in the given spaces.

Each question scores 1 mark. A mark will not be deducted for a wrong answer.
Any rough working should be done in this booklet.

Section B – Structured Questions (15 marks)

Answer ALL questions.

The number of marks is given in the brackets [] at the end of each question or part question.

The total marks for this paper is **20**.

FOR EXAMINERS' USE			
	Target marks	Your marks	Full Marks
TOTAL			20

Adapted from past year prelim papers

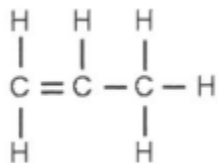
Section A – Multiple Choice Questions (5 marks)

Write your answers in the given boxes on page 3.

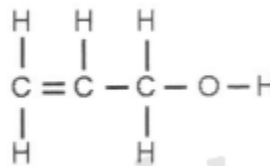
- 1 An organic compound, X, decolourises red-brown aqueous bromine and extinguishes a lighted splint with a 'pop' sound when it reacts with magnesium.

Which of the following is X?

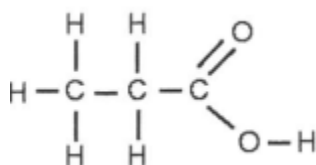
A



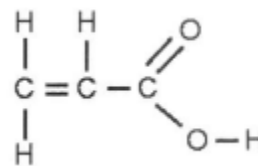
B



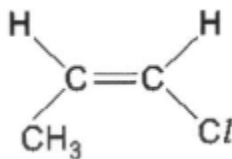
C



D

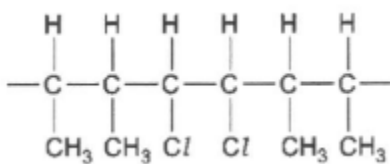


- 2 The structure below shows a monomer.

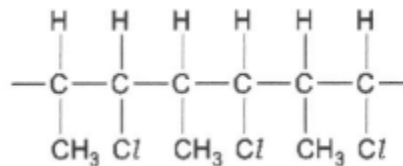


Which of the following shows **three repeating units** of the polymer chain formed?

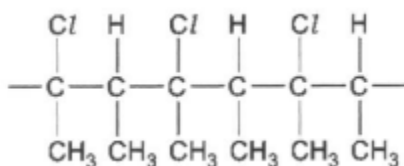
A



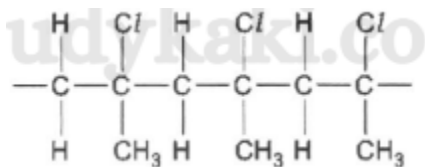
B



C



D





	X	Y
A	fraction	monomer
B	monomer	fraction
C	monomer	polymer
D	polymer	fraction

A	Aqueous bromine	B	Acidified potassium manganate (VII)
C	Limewater	D	Lighted splint

Q1	Q2	Q3	Q4	Q5

Section B – 15 marksAnswer **all** questions.

- 6 (a) Naphtha is a fraction of crude oil. Naphtha is processed by cracking in an oil refinery.

One of the molecules in naphtha is a saturated hydrocarbon X containing 5 carbon atoms. When this molecule is cracked it produces propane, C_3H_8 and one other hydrocarbon Y.

- (i) Why is cracking of naphtha an important process in an oil refinery?

[2]

- (ii) Draw a **dot-and-cross** diagram of propane.

[2]

- (b) Deduce the general formula of the organic compound with a functional formula of $-COOH$.

[1]**[Total: 5]**

- 7 In Formula One, octane is used as fuel. Octane belongs to a family of organic compounds called alkanes, which is also known as a hydrocarbon.

Table 2.1 shows the melting points and boiling points of a few alkanes.

Table 2.1

Name of alkane	Formula	Melting point / °C	Boiling point / °C
ethane	C_2H_6	-183	-89
propane	C_3H_8	-188	-42
butane	C_4H_{10}	-138	-1
pentane	C_5H_{12}	-130	36
hexane	C_6H_{14}	-95	69
octane	C_8H_{18}	-57	126

- (a) What is the type of bonding in octane?

_____ [1]

- (b) Describe why a molecule of octane has a low boiling point.

 _____ [3]

- (c) (i) Describe how you would differentiate a sample of octane with a sample of octene.

 _____ [3]

- (ii) Describe how you would differentiate a sample of ethanol with a sample of ethanoic acid.

[3]

[Total: 10]

[END OF PAPER]