

## Chemistry

## Section I (continued)

## Part B – 60 marks

## Attempt Questions 16–27

Allow about 1 hour and 45 minutes for this part

Answer the questions in the spaces provided.

Show all relevant working in questions involving calculations.

Marks

## Question 16 (6 marks)

You have carried out a first-hand investigation to compare the reactivity of an alkene with its corresponding alkane.

- (a) State the name of the alkene. 1

CYCLOHEXANE

- (b) Outline a procedure to compare the reactivity of this alkene with its corresponding alkane. 2

ALKANE = CYCLOHEXANE. 1. BOTH SOLUTIONS ARE PLACED IN SEPARATE TEST TUBES. 2. BROMINE WATER IS ADDED ( $Br_2$ ) TO BOTH TEST TUBES. NOTE - EQUAL AMOUNTS OF CHEMICALS SHOULD BE USED - AND THIS EXPERIMENT SHOULD BE DONE IN THE ABSENCE OF U.V LIGHT, OTHERWISE RESULTS WILL BE INDISTINGUISHABLE.

- (c) Describe the results obtained from this first-hand investigation and include relevant chemical equations. 3

IT WAS FOUND IN THE ABSENCE OF U.V LIGHT THAT BY ADDING THE BROMINE WATER ( $Br_2$ ) TO BOTH THE ALKANE AND ALKENE THAT THE BROMINE WATER (BROWN) DECOLOURISES IN THE TEST TUBES CONTAINING CYCLOHEXENE BUT NOT IN ITS CORRESPONDING ALKANE. THIS IS DUE TO THE HIGH REACTIVITY OF THE DOUBLE BOND IN THE ALKENE.

