

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

cyclohexene

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

- Conduct the following experiment in the absence of UV light (dark room)
- Place a small amount of bromine water, ^(5ml) in testtube A and testtube B (5ml)
- To testtube A add a small amount of cyclohexane (5ml)
- To testtube B add a small amount of cyclohexene (5ml)
- Observe any changes.

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

When cyclohexene was added to bromine water in the dark, the solution decolourised leaving a clear solution. This was the same result when conducted with light present.

When cyclohexane was added to bromine water in the dark, the solution remained a reddish brown colour. However, when the same experiment was carried out in the presence of UV light, the solution also decolourised to an extent, similar to ~~that~~ the cyclohexene solution.

