

Chemistry

Section I – Part B (continued)

Marks

Question 25 (6 marks)

Explain the need for monitoring the products of a chemical reaction such as combustion.

6

When need to monitor chemical combustion because so that way we can monitor any potential hazards, like toxic gases, that may be hazardous or harmful for humans. Also we need to monitor the reaction carefully so that way it doesn't get out of our hands. So if it does it can be easily extinguished without burning the whole place down.

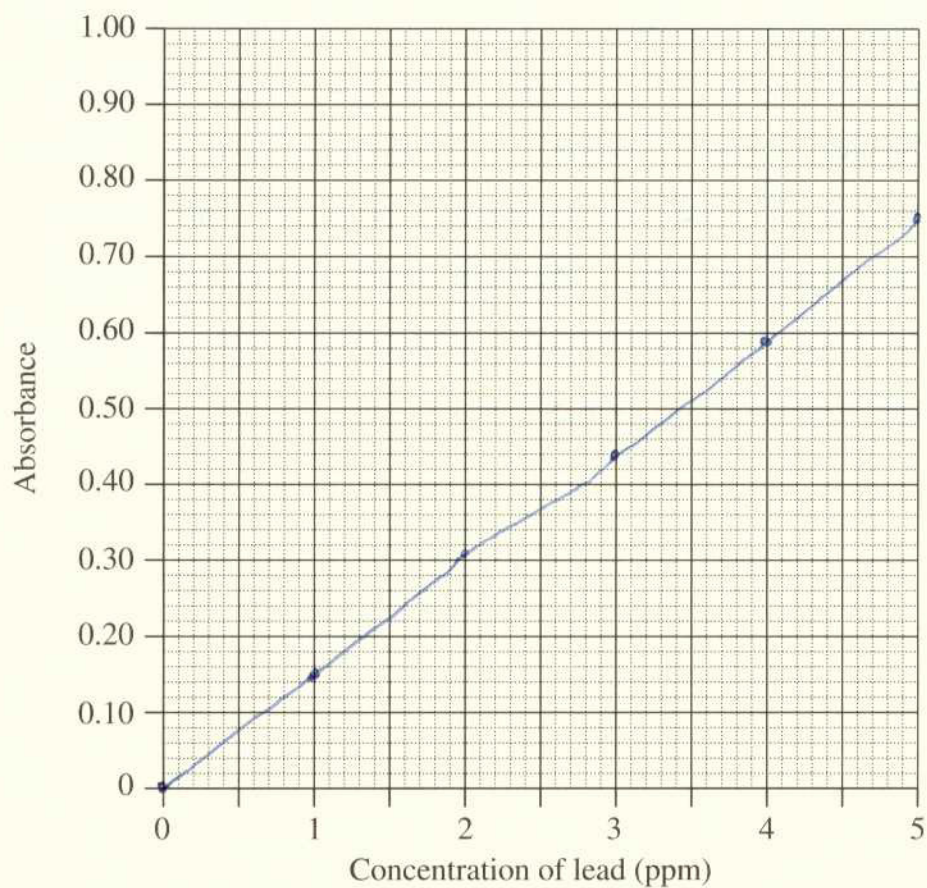
Question 26 (4 marks)

A university student decided to measure the concentration of lead (Pb) in the soil around his home. He prepared five standard lead solutions of known concentration. The absorbance of these solutions was measured. These results are shown in the table.

<i>Concentration of lead standard (ppm)</i>	<i>Absorbance</i>
0	0.00
1	0.15
2	0.31
3	0.44
4	0.59
5	0.75

- (a) Draw a line graph of these data.

1



Question 26 continues on page 23

Question 26 (continued)

- (b) The student prepared solutions from four different soil samples around his home. These solutions were also analysed using the same method. The results are shown in the table. 1

<i>Solutions made from soil samples</i>	
<i>Area sampled</i>	<i>Absorbance</i>
Front garden bed	0.19
Back garden bed	0.09
Mail box	0.22
Back fence	0.11

Determine the highest concentration of lead in the soil around the home.

Back garden bed. Mail box

- (c) State an hypothesis to account for the variation in lead concentration around the student's home. 2

Mail box will have the highest concentration of lead around the house because it soil has the highest level of absorbance.

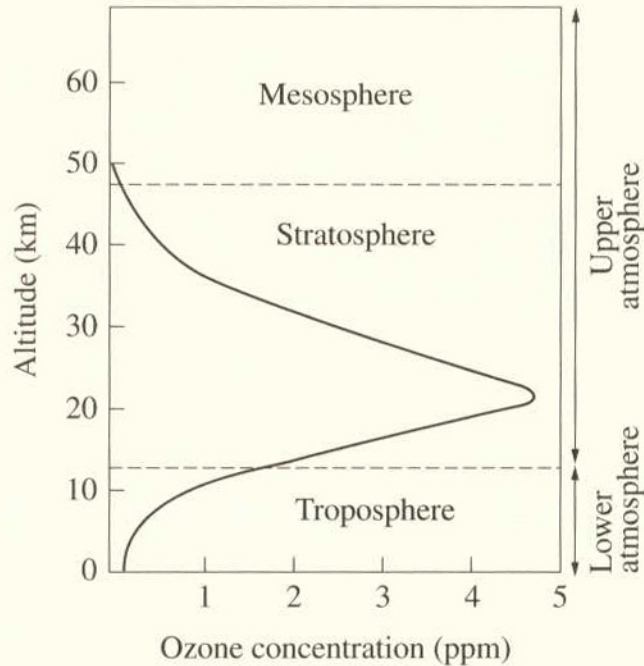
End of Question 26

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Question 27 (4 marks)

Oxygen exists in the atmosphere as the allotropes oxygen and ozone. The graph shows a typical change in ozone concentration with changing altitude.

4



Compare the environmental effects of the presence of ozone in the upper and lower atmosphere.

ozone concentration increase in the lower atmosphere (Troposphere), as it reaches its optimum concentration, it starts decrease as altitude increases.
 In other words, as altitude increases, oxygen decreases.