

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

Chemical experiments must be safe to the chemists and the environment. Combustion must be kept at constant monitoring for safety hazards are inherent in the reduction of water instead molecules through the use of combustion using other chemicals is dangerous in the fact that chemical reactions can occur, which are unexpected. Safety is a chemists first priority. The result of such experiments may be harmful to the human or society or nature if not monitored correctly by a Scientist or Chemist.

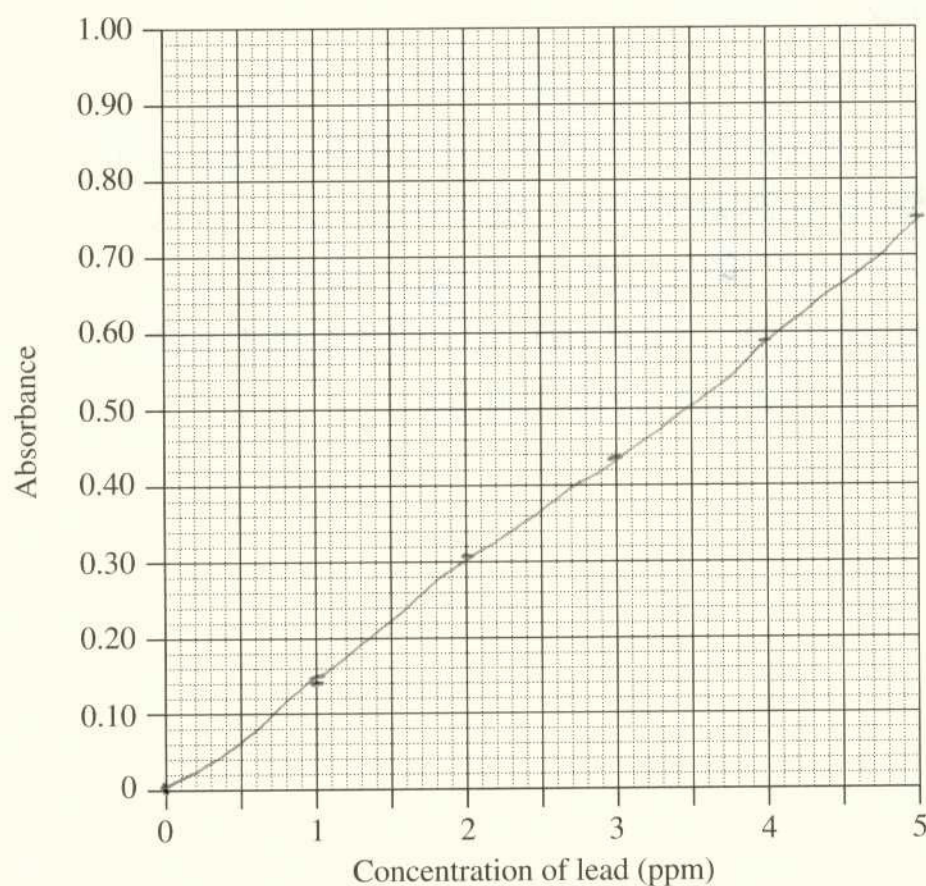
Question 26 (4 marks)

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.

Mail box

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

2

The mail box area may contain more lead than the other soil samples because it is situated near the road where cars use leaded petrol. If the soil is contaminated it cannot sustain life "garden"

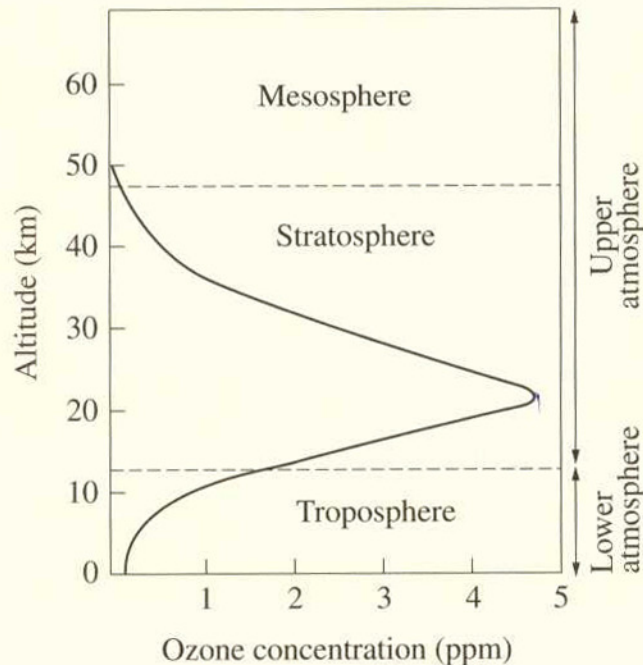
End of Question 26

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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.

There is a higher level of ozone concentration in the upper atmosphere (stratosphere). ~~due to it~~ This is due to the stratosphere being able to protect the ozone U.V. light from entering the earth. The effect of the presence of ozone is much greater in the upper atmosphere than in the lower atmosphere.

If the amount of ozone in the stratosphere was present in ~~the~~ our atmosphere, all living things would die.

Ozone would cause cancers of many kind, basically kill off all living organisms.