AQA Examination-style questions

1 (a) What term is used to describe organisms which cause disease? *(1 mark)*

(b) Name **two** types of organism which cause disease. *(2 marks)*

(c) Disease-causing microorganisms gain entry into the body via one of its interfaces with the environment. **Figure 1** shows two of these interfaces. Copy and complete the diagram with two other examples of interfaces through which microorganisms may gain entry into the body. *(2 marks)*

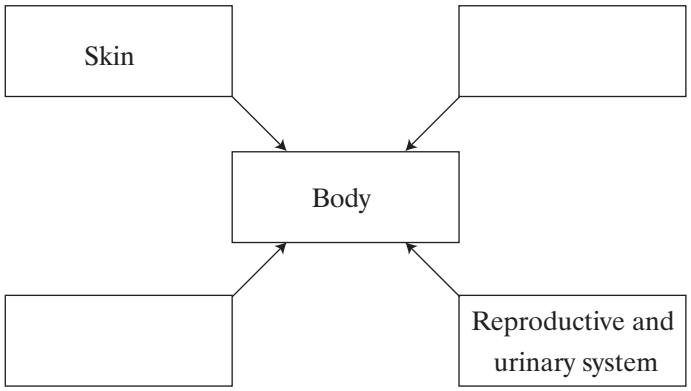


Figure 1

(d) Describe **two** ways in which the activity of microorganisms can give rise to disease symptoms. *(2 marks)*

2 Lung cancer, chronic bronchitis and coronary heart disease (CHD) are associated with smoking. **Tables 1** and **2** give the total numbers of deaths from these diseases in the UK in 1974.

Table 1 Men

Age/years	Number of deaths (in thousands)		
	Lung cancer	Chronic bronchitis	Coronary heart disease
35–64	11.5	4.2	31.7
65–74	12.6	8.5	33.3
75+	5.8	8.1	29.1
Total (35–75+)	29.9	20.8	94.1

Table 2 Women

Age/years	Number of deaths (in thousands)		
	Lung cancer	Chronic bronchitis	Coronary heart disease
35–64	3.2	1.3	8.4
65–74	2.6	1.9	18.2
75+	1.8	3.5	42.3
Total (35–75+)	7.6	6.7	68.9

(a) (i) Using an example from the tables, explain why it is useful to give data for men and women separately.

(ii) Data like these are often given as percentages of people dying from each cause. Explain the advantage of giving these data as percentages. *(4 marks)*

(b) Give **two** factors, other than smoking, which increase the risk of coronary heart disease. *(2 marks)*

AQA, 2004

3 The graph in **Figure 2** gives information about the effects of cigarette smoking, plasma cholesterol concentrations and high blood pressure on the incidence of heart disease in American men.

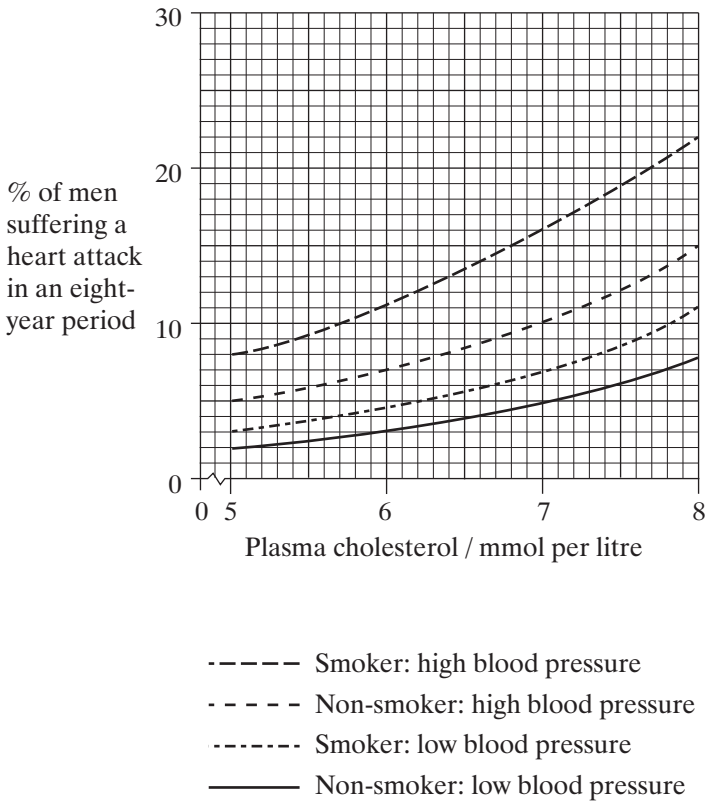


Figure 2

(a) A non-smoker with low blood pressure has a plasma cholesterol concentration of 5 mmol per litre. Over a period of time this concentration increases to 8 mmol per litre. By how many times has this risk of heart disease increased? Show your working. *(2 marks)*

(b) Two non-smoking men with low blood pressure both have plasma cholesterol concentrations of 5 mmol per litre. One of them starts to smoke and the plasma cholesterol concentration of the other increases to 7 mmol per litre. Which man is now at the greater risk of heart disease? Explain your answer. *(3 marks)*

AQA, 2001

4 The table shows the number of deaths from various causes in a group of individuals of the same age. Individuals were identified as smokers or non-smokers.

Table 3

Cause of death	Number of deaths among smokers	Number of deaths among non-smokers
Total deaths (all causes)	7316	4651
Coronary artery disease	3361	1973
Strokes	556	428
Aneurysm	86	29
Lung cancer	397	37
Other causes	2916	2184

(a) Why was it necessary for the smokers and the non-smokers to be the same age? *(2 marks)*

(b) Do the figures in the table show that smokers were more likely to have died from a stroke than non-smokers? Use suitable calculations to support your answer. *(3 marks)*

(c) **Figure 3** and **Figure 4** show information from one study of lung cancer and lung diseases in adults of all ages in the UK.

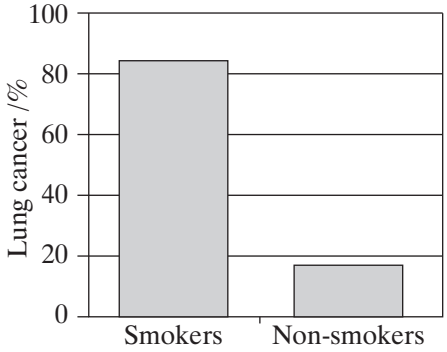


Figure 3 Proportion of lung cancer sufferers who are smokers or non-smokers

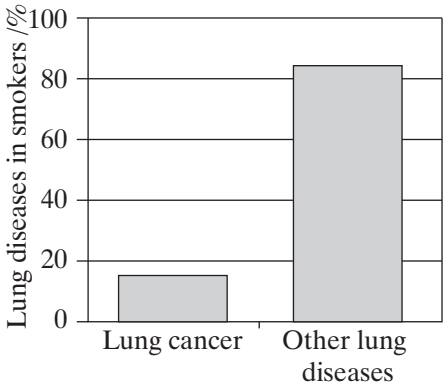


Figure 4 Proportion of types of lung disease in smokers who are suffering from lung disease

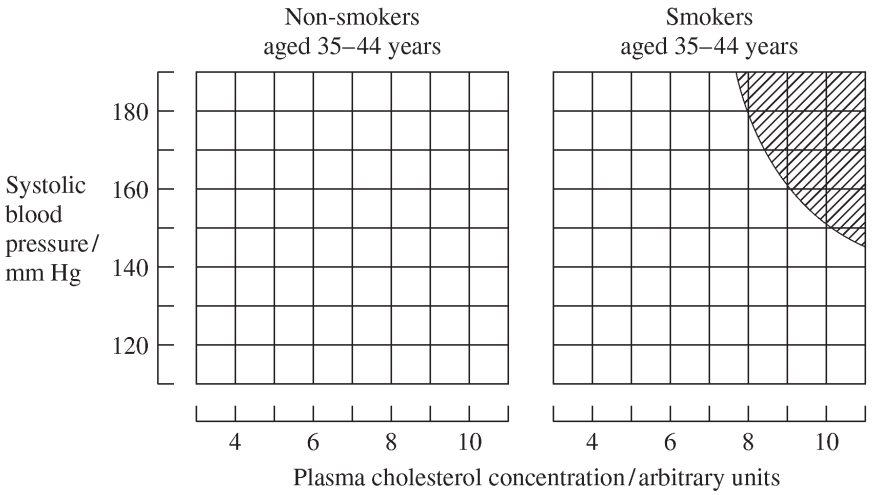
(i) Give **three** conclusions that can be drawn from the results of this study.

(ii) Suggest **two** reasons why conclusions made only on the basis of these data may not be reliable.

(5 marks)

AQA, 2003; AQA, 2002

5 (a) **Figure 5** shows the influence of different risk factors on the incidence of coronary heart disease in women. 7.5 mm Hg is equal to 1 kilopascal.



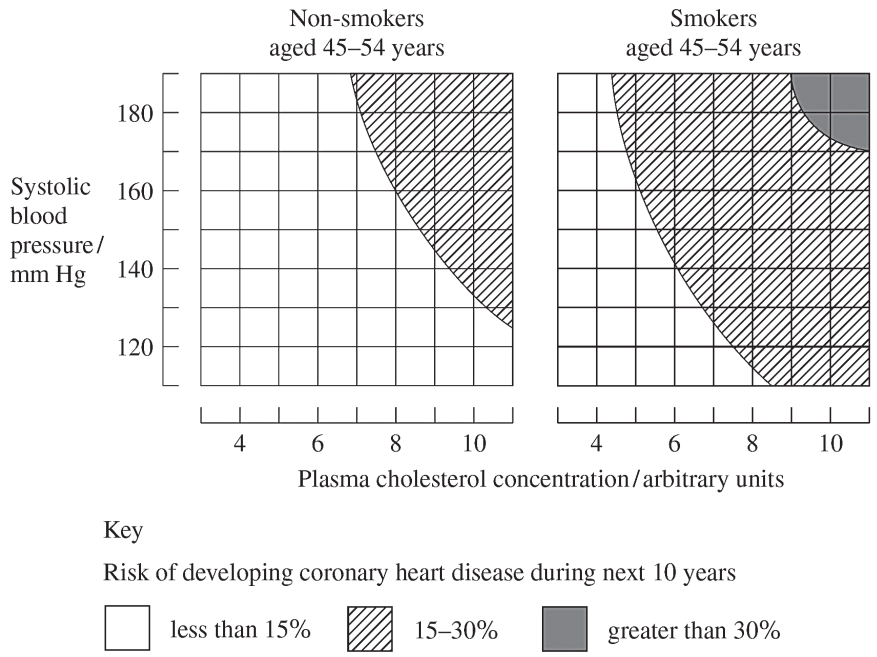


Figure 5

(i) Use **Figure 5** to give the characteristics of women with the highest risk of developing coronary heart disease.

(ii) **Figure 5** only has limited value in predicting whether a particular woman might develop coronary heart disease. Explain why. *(5 marks)*

(b) In an investigation, volunteers changed 5% of their energy intake from one food source to another. Their total energy intake remained constant. The effect of this change on their risk of developing coronary heart disease was measured. **Figure 6** shows the results of this investigation.

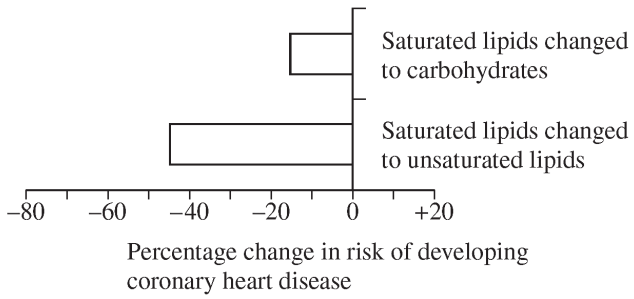


Figure 6

(i) Explain why it was necessary to ensure that the total energy intake remained constant.

(ii) Suggest an explanation for the results shown in **Figure 6**. *(4 marks)*

AQA, 2007