Answers to examination-style questions

Answers	Marks	Examiner's tips
1 (a) pathogens;	**1**	
(b) any 2 from: bacteria, viruses, fungi;	**2**	The question states **organisms** rather than **microorganisms** so fungi is an acceptable answer, as well as some other types of organism that you do not need to know about.
(c) digestive system/gut; respiratory system/lungs;	**2**	There are other interfaces but these are the two you need to remember.
(d) damages cells of the host; production/release of toxins;	**2**	Learn these; they are important points!
2 (a) (i) because there are big differences; any correct named example, e.g. lung cancer/bronchitis much lower in women than in men;	**2**	Although not required in this question, it is often advisable to quote specific figures from the data as examples of differences.
(ii) easier to compare if sample size effectively the same; different numbers of people in each group;	**2**	The important point for the first mark is to **compare**.
(b) any 2 from: more stress/more saturated fats in diet/less physical activity/high blood pressure/high blood cholesterol levels/ obesity;	**2**	As the question is not specific to lifestyle factors, other factors, such as genetics, age and sex, are valid answers.
3 (a) risk increases 3.8–4 times; evidence of correct working (e.g. 7.8/2.0);	**2**	It is important to be able to use data to calculate how risk can increase or decrease.
(b) increasing cholesterol levels carries greater risk; starting smoking increases risk from 2.0% to 3%: increasing cholesterol levels from 5 to 7 increases risk from 2.0% to 5%;	**3**	You need to interpret data to identify risk factors and how these may change.
4 (a) enables comparison to be made: since increase in incidence with age/older people have more exposure to cigarettes;	**2 max**	Again the idea of comparison is essential for the first mark.

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(b) no (*incorrect response*), with some attempt at calculation based on 556 and 428 as numerators; no (*incorrect response*), with correct calculation; yes (*correct response – non-smokers have greater risk than smokers*), with calculation of 556/7316 × 100 = 7.6% and 428/4651 × 100 = 9.2% for smokers and non-smokers respectively;	**1** **2** **3 max**	You could still gain marks if you answered 'no' rather than 'yes', as long as you used the correct data in your answer. Full marks require a correct response and a correct calculation.
(c) **(i)** any 3 from – most lung cancer occurs in smokers/ non-smokers also develop cancer; smoking increases the risk of lung cancer; smoking is an environmental factor for lung cancer; smokers' risk is more than 4× that of non-smokers/correct reference to figures; (*but*) only a small proportion of smokers develop lung cancer; smokers more likely to develop other lung disease than cancer;	**3 max**	To gain maximum marks ensure you look at all the information provided when formulating your conclusions. Take particular note of the axes so that you know precisely what is being measured. Usually in exams you would have to provide conclusions using data from both figures to gain maximum marks.
(ii) any 2 from – do not know size of sample/might be small sample in study; genetic differences/predisposition; different age at which started to smoke; different number of cigarettes smoked per day; different sexes in sample;	**2 max**	Many of these answers will be applicable to any similar studies on risk factors.
5 **(a)** **(i)** smokers with cholesterol reading above 9 and BP over 170 and aged 45–54;	**2**	One omission/error = 1 mark.
(ii) other risk factors involved; any 2 from: stress/ activity/heredity/ salt intake/obesity, etc: risk factors will change over 10-year period; smoking not quantified;	**3 max**	Omission of quantities for blood pressure/ cholesterol but mention of all 4 risk factors in context = 1 mark.

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(b) (i) increasing energy intake would increase risk/ obesity a risk factor; increasing energy intake would increase plasma cholesterol; decreasing energy intake could decrease CHD risk;	**2 max**	Do not say 'it will affect the results'. Two explanations = 2 marks.
(ii) both diets have less saturated fat; saturated fat associated with heart disease;	**2 max**	Other valid suggestions would be credited.