

Question	Answers	Extra information	Mark	AO / Specification reference
01.1	not caused by a pathogen cannot be spread between organisms		1 1	AO1 4.2.2.5
01.2	alcohol – liver disease smoking – lung cancer UV radiation – skin cancer	award 2 marks for all boxes matched correctly award 1 mark for 1 box correctly matched	2	AO1 4.2.2.6
01.3	Human papilloma virus (HPV) – cervical cancer immune system defects – further infections severe physical ill health – depression	award 2 marks for all 3 boxes matched award 1 mark for 1 or 2 boxes correctly matched	2	AO1 4.2.2.5
02.1	a small mesh tube that is inserted into the blood vessel to keep it open		1	AO1 4.2.2.4
02.2	benefit <ul style="list-style-type: none"> <li>• long-term success rate is high</li> <li>• lowers the risk of the patient having a heart attack risk</li> <li>• can result in an irregular heartbeat</li> </ul> patient needs to take blood thinning drugs	award 2 marks for all 4 correct statements	1 1	AO1 4.2.2.4
02.3	high fat diet / lack of exercise		1	AO1 4.2.2.4
03.1	any disease of the heart or blood vessels		1	AO1 4.2.2.6 MS 1c
03.2	22%		1	AO2 4.2.2.5 4.2.2.6 MS 1c

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03.3	33 000	accept $0.22 \times 150\,000$ for 1 mark	2	AO2 4.2.2.5 4.2.2.6
03.4	any <b>three</b> suggestion + explanation from: <ul style="list-style-type: none"> <li>• eat fewer fatty foods               <ul style="list-style-type: none"> <li>○ which would reduce the build-up of cholesterol which would lead to blocked arteries</li> </ul> </li> <li>• ensure energy input in food matches daily energy consumption / maintain a healthy weight               <ul style="list-style-type: none"> <li>○ to prevent excess food being stored as fat</li> </ul> </li> <li>• (if obese) exercise more / consume less food / energy than daily requirement               <ul style="list-style-type: none"> <li>○ to lose excess weight</li> </ul> </li> <li>• stop smoking / do not smoke as smoking narrows blood vessels / damages artery lining / increases risk of clot formation / increases blood pressure</li> </ul>	to award six marks, answers should include three lifestyle factors with three linked explanations.  accept other acceptable answers with linked explanations	6	AO1 4.2.2.6
04.1	liver brain		1 1	AO1 4.2.2.6
04.2	positive correlation		1	AO2 4.2.2.6
04.3	2.6 (x greater risk)		1	AO2 4.2.2.6
04.4	non-communicable because the disease cannot be transmitted / not caused by a pathogen		1 1	AO1 4.2.2.6

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05.1	more correlation tar causal mechanism		1 1 1 1	AO1 4.2.2.6
05.2	carcinogen		1	AO1 4.2.2.6
05.3	nicotine – increases heart rate carbon monoxide – less oxygen transported		1 1	AO1 4.2.2.6
06.1	to prevent back flow of blood from left ventricle (into left atrium)		1 1	A02 4.2.2.2
06.2	less blood leaves the heart than normal blood coming into heart chamber mixes with blood that has not left, making the heart less efficient		1 1	AO1 4.2.2.4
06.3	<b>Advantages: one</b> from: <ul style="list-style-type: none"> <li>the valve will last longer</li> <li>will require fewer additional surgical procedures in the future</li> <li>not made from an animal product which some people may object to on ethical grounds</li> <li>less chance of rejection as not using tissue from another organism</li> </ul> <b>Disadvantages: one</b> from: <ul style="list-style-type: none"> <li>patient has to take medication permanently</li> <li>anti-coagulation drugs may have side-effects</li> </ul> some people may be allergic to titanium		1         1	AO3 4.2.2.4

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<b>07.1</b>	a correlation means there is a link between a factor and a disease (however the risk factor does not necessarily cause the disease). causation means that an increase in the risk factor results in an increase in the incidence of the disease.		1  1	AO1 4.2.2.6
<b>07.2</b>	age / genes / biological sex		1	AO1 4.2.2.6
<b>07.3</b>	a disease caused by cell division/growth of cells/cell multiplication/mitosis that is out of control/abnormal/uncontrolled.		1 1	AO1 4.2.2.7
<b>07.4</b>	UV light in sun causes changes in DNA / mutations (if not corrected by body) this can lead to uncontrolled cell division		1 1	AO1 4.2.2.7
<b>07.5</b>	benign tumours are usually contained within a membrane don't invade nearby tissue / can't spread (not cancerous) don't form secondary tumours	accept converse answer	1 1 1	AO1 4.2.2.7
<b>08.1</b>	21.3 (kg/m <sup>2</sup> )	accept $\frac{48}{1.52}$ for 1 mark	2	A02 4.2.2.5 4.2.2.6
<b>08.2</b>	healthy weight		1	A02 4.2.2.5 4.2.2.6

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08.3	any <b>two</b> from: <ul style="list-style-type: none"> <li>increased risk of cardiovascular disease</li> <li>risk of high blood pressure / build-up of fatty deposits in the arteries</li> <li>increased risk of type 2 diabetes</li> <li>increased the risk of certain cancers</li> </ul> increased strain on joints		2	AO1 4.2.2.5 4.2.2.6
08.4	greater level of exercise (in population) means more energy expended than previously any <b>one</b> from: <ul style="list-style-type: none"> <li>reduces the number of people for whom energy intake is greater than energy required</li> <li>fewer people would become obese in future</li> <li>larger number of people for whom energy required is greater than energy intake</li> </ul> excess fat will be used to supply energy so these (obese) people would lose weight		1 1	AO3 4.2.2.5 4.2.2.6
09.1	fatty narrow reduces less		1 1 1 1	AO1 4.2.2.4
09.2	poor diet / genetics / medication		1	AO1 4.2.2.4
09.3	statins		1	AO1 4.2.2.4
10.1	add Biuret reagent changes from blue to purple (if protein present)		1 1	AO1 4.2.2.1

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10.2	too large / insoluble		1	AO3 4.2.2.1
10.3	enzyme had been denatured enzyme's protein structure changed / active site altered lactase can no longer bind to lactose to break it down		1 1 1	AO2 4.2.2.1