AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.2.2.5

Health issues

Mark schemes and examiner comments

Tier	**Higher**
Question groups	**1**
Available paper years	**2023–2023**

Using this booklet

1. Booklet answer numbers match the question booklet.
2. Use the original question number within marking tables.
3. Examiner comments are included where available.

Name: _____ **Date:** _____

Where a precise marking extract is unavailable, the full source document is included in an appendix. Any missing mark scheme is explicitly identified.

4.2.2.5 Health issues

Answer 01 · Mark scheme

June 2023 | 8464/B/1H | Original Q1

Question 1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	cancer		1	AO1 4.2.2.7 4.2.2.6

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.2	any **one** from: • (coronary) heart disease / CHD / cardiovascular disease • diabetes	ignore cancer allow atherosclerosis ignore heart attack allow high blood pressure allow stroke / asthma / depression / gallstones / (osteo)arthritis allow sleep apnoea	1	AO1 4.2.2.4 4.2.2.5 4.2.2.6

4.2.2.5 Health issues

Answer 01 · Mark scheme

June 2023 | 8464/B/1H | Original Q1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.3	any **one** from: • taxes on high energy / fat / sugar foods • education (about diet and health) • (government) advertising • restrict media advertising of high energy / fat / sugar foods • information on food labels • help / advice / groups for obese people via the NHS • calorie information on restaurant / takeaway menus • regulation of supermarket offers on high sugar / fat / energy foods • regulation of type of foods for sale near checkouts • exercise campaigns	allow increase the price on high energy / fat / sugar foods	1	AO3 4.2.2.5 4.2.2.6

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.4	BMI = $\frac{69}{1.64^2}$	allow BMI = $\frac{69}{1.64 \times 1.64}$ allow BMI = $\frac{69}{2.6896}$	1	AO2
	BMI = 25.6(5437….)	allow 26 or 25.7	1	AO2
	(the person's BMI category is:) overweight	must be consistent with their calculated BMI value	1	AO3 4.2.2.5 4.2.2.6

4.2.2.5 Health issues

Answer 01 · Mark scheme

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.5	any **one** from: • women will gain mass / weight (during pregnancy) • (developing) baby will increase mass / weight of woman	allow BMI (of woman) will increase (during pregnancy)	1	AO3 4.2.2.5 4.2.2.6

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.6	any **two** from: • smokers had babies with lower birth mass • women / smokers / non-smokers with higher BMI had heavier babies • smoking had the greatest effect on birth mass in underweight women • smoking had the least effect on birth mass in overweight women • smoking had less effect on birth mass in overweight and obese women (than in underweight and healthy weight women)	statements must be comparative allow converse statements allow weight for mass allow obese women have the heaviest / heavier babies allow underweight women have the lightest / lighter babies allow there is only a 365 g difference between the smallest and largest babies	2	AO3 4.2.2.5 4.2.2.6

4.2.2.5 Health issues

Answer 01 · Mark scheme

June 2023 | 8464/B/1H | Original Q1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.7	coughs / sneezes (spread virus in droplets)	assume 'it' refers to the virus allow breathing out (spreads virus in droplets)	1	AO1 4.3.1.1 4.3.1.2
	droplets / virus are inhaled	allow droplets / virus are breathed in ignore contact with infected person unqualified allow touch a contaminated surface **and** then touch your mouth / nose / eyes for **1** mark if no other marks awarded allow kissing for **1** mark only	1	

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.8	$\frac{17}{100}$ × 67 961 900	allow 0.17 x 67 961 900	1	AO2 4.3.1.4
	= 11 553 523	allow 11 553 500	1	

4.2.2.5 Health issues

Answer 01 · Mark scheme

June 2023 | 8464/B/1H | Original Q1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.9	any **one** from: • dry feet thoroughly (after washing) • do not share socks / tights / shoes / towels • use a fungicide • do not walk around barefoot in public / contaminated areas	 allow use foot powder ignore keep feet dry ignore wash feet regularly allow named fungicide allow wear silver(-impregnated) socks allow wear flip flops in public / contaminated areas ignore avoid moist conditions	1	AO2 4.3.1.1 4.3.1.4

Total Question 1	14

4.2.2.5 Health issues

Answer 01 · Examiner comments

June 2023 | 8464/B/1H | Original Q1

Question 1

Question 1 was common to both tiers and was set at standard demand.

01.1 Almost all students on the Higher tier identified cancer as a non-communicable disease.

01.2 Almost all students named a non-communicable disease that obesity is a risk factor for. Diabetes or coronary heart disease, which are both listed in the specification, were the most common responses. References to heart attack or heart conditions were ignored as a named disease was required.

01.3 Fewer than half the students suggested a national policy that could help people to lose weight. The most common suggestions related to increasing taxes on unhealthy foods. This was usually phrased as increase the cost of unhealthy foods. A few suggested decreasing the cost of healthy foods.
Quite a lot of students suggested providing free gym memberships, or more public sports facilities. Some referred to mandatory PE lessons in school. References to labelling the energy content of foods and meals on packaging and menus were also made.
A common mistake was to give lifestyle changes that an individual could make, rather than a policy that a national organisation or the Government could make. Exercise regularly and eat a balanced diet were often stated, but these did not gain credit. Saying increase the recommended amount of daily exercise a person should do would gain credit, as this suggests a national policy.

01.4 In this BMI calculation 1 mark was for the correct substitution into the equation. The second mark was for a correct calculation, which was usually given as 25.65. Most students did show their working, which was good to see. The final mark was for selecting the correct BMI category that matched their final answer. Therefore, if a student did an incorrect calculation, they could still score the third mark. This was sometimes seen if they didn't square 1.64, and gave an answer of 42.07 with the BMI category obese. On the Higher tier the vast majority of students scored full marks.

01.5 Three fifths of students scored the mark for saying that women gain weight when pregnant, or that their mass will increase due to the baby. A clear reference to the weight, mass or BMI of the woman increasing was needed, so saying the woman's weight would change was insufficient. Incorrect responses included saying the BMI category was calculated before the woman became pregnant to check on her health or the baby's health, to see the change in the woman's BMI during pregnancy or for comparison. Some described the harmful effects of smoking on a developing baby, which did not answer the question.

01.6 Two conclusions were needed, so smoking or BMI of the mother had to be linked to the birth mass, or weight, of the babies. Comparative statements were needed. Almost half the students scored both marks, and two fifths scored 1 mark. The most common correct response was that non-smokers had heavier babies. Some students repeated this conclusion, and also stated the converse, saying smokers had lower birth mass babies. These two statements could only score 1 mark. A reference to a healthier weight was often seen, which was insufficient. The main misunderstanding was that smoking affected the woman's mass, and not the birth mass of the baby.

01.7 The first marking point was for how the measles virus is transferred out of an infected person. Two thirds of students scored this mark for saying by coughing or sneezing. The second mark was for how the virus is taken in by a second person. Fewer than a fifth of students scored both marks. Many thought the virus was transferred by direct contact. Some said the virus is airborne, but did not describe how it left one person and entered another.

4.2.2.5 Health issues

Answer 01 · Examiner comments June 2023 | 8464/B/1H | Original Q1

01.8 The majority of students scored full marks for the percentage calculation to estimate the number of people with athlete's foot. Some students incorrectly converted 17% to 0.017, rather than to 0.17 Other students calculated 10%, 1% and then 7% of 67 961 900, then added the values for 10% and 7% together to find 17%.

01.9 Fewer than a fifth of students scored a mark for suggesting one way a person could reduce their chance of catching athlete's foot. References to changing socks or washing feet regularly were ignored. Saying keep your feet dry was too vague, a reference to drying feet thoroughly, properly or between the toes after washing was required, which was rarely seen. Use talcum powder was seen occasionally, which was allowed. The idea of covering the feet when walking around at a public swimming pool was suggested by some students, but saying don't walk around barefoot, without qualification, was ignored.