

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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AASC2F

Question 1

question	answers	extra information	mark										
1(a)(i)	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">Metal</td> <td style="width: 50%;">Use for material</td> </tr> <tr> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Metal</div> </td> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Bicycle frame</div> </td> </tr> <tr> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Ceramic</div> </td> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Running shoe</div> </td> </tr> <tr> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Wood</div> </td> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Disc brakes in a racing car</div> </td> </tr> <tr> <td></td> <td style="height: 60px;"> <div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Golf club</div> </td> </tr> </table>	Metal	Use for material	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Metal</div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Bicycle frame</div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Ceramic</div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Running shoe</div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Wood</div>	<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Disc brakes in a racing car</div>		<div style="border: 1px solid black; width: 80%; margin: 0 auto; padding: 5px;">Golf club</div>	<p style="text-align: center;">1 mark for each correct box <i>extra line from material cancels the mark</i></p>	3
Metal	Use for material												
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1(a)(ii)	<table border="1" style="width: 100%; text-align: center;"> <tr> <th style="width: 50%;">Material</th> <th style="width: 50%;">Property of material</th> </tr> <tr> <td>Aluminium</td> <td>strong and light</td> </tr> <tr> <td>Ceramic</td> <td>low thermal conductivity</td> </tr> <tr> <td>Polyester</td> <td>flexible</td> </tr> </table>	Material	Property of material	Aluminium	strong and light	Ceramic	low thermal conductivity	Polyester	flexible	<p style="text-align: center;">1 mark for each correct row</p>	3		
Material	Property of material												
Aluminium	strong and light												
Ceramic	low thermal conductivity												
Polyester	flexible												
1(b)	<p>natural – cotton / leather / silk / linen / rubber / <i>latex</i></p> <p>synthetic – nylon / polyester / rayon / terylene / polyurethane / <i>acrylic</i></p>	<p><i>allow wool</i></p> <p><i>allow lycra / elastane / spandex / satin</i></p> <p><i>allow brand names eg Kevlar / Neoprene / Gortex</i></p> <p><i>ignore polymers / plastic</i></p>	<p>1</p> <p>1</p>										

Question 1 continues on the next page

AASC2F**Question 1 continued**

question	answers	extra information	mark
1(c)	any two from: <ul style="list-style-type: none">• long lasting / durable / <i>tough</i>• provide friction / grip / <i>non-slip</i>• flexible	<i>do not accept light weight / thinner</i> <i>allow strong</i> <i>ignore support / protection</i>	2
Total			10

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Question 2

question	answers	extra information	mark
2(a)	pesticide	<i>in this order</i>	1
	herbicide		1
	artificial fertiliser		1
2(b)(i)	<i>intensive / intense</i>	allow factory farming <i>ignore battery farm / intensity</i>	1
2(b)(ii)	<p><i>any two from:</i></p> <ul style="list-style-type: none"> less space needed (per pig) / less land needed gain weight (<i>quicker</i>) or go to market quicker low labour costs / less manpower needed / automation <i>monitoring qualified or controlled feeding</i> 	<p><i>ignore references to costs</i></p> <p><i>allow can keep more pigs (per area)</i></p> <p><i>allow more meat / food produced or grow bigger / fatter or restricted movement / temperature qualified</i></p> <p><i>allow less time needed to look after them</i></p> <p><i>ignore reference to disease</i></p> <p><i>ignore easier to care for</i></p>	2
2(b)(iii)	<i>disease (spreads) or reference to removing waste</i>	<i>ignore inhumane / ethical reasons</i> <i>ignore references to costs</i>	1
2(b)(iv)	<p><i>any three from:</i></p> <ul style="list-style-type: none"> weigh the pigs at the start <i>allow to grow for set time period</i> weigh the pigs after set time period / at the end or <i>time how long it takes to put on a set amount of weight</i> compare data or pigs from pen with most mass is the best 	<i>if 1st or 3rd point is not given allow 1 mark for weighing</i>	3

Question 2 continues on the next page

AASC2F**Question 2 continued**

question	answers	extra information	mark
2(b)(v)	any two from: <ul style="list-style-type: none">• <i>amount / type of food (per pig)</i>• <i>time period / mass / weight gained</i>• <i>same temperature / environment</i>• <i>type of pig / sex / age</i>	<i>ignore growth</i>	2
2(c)(i)	13 (%)	<i>If a candidate makes up a figure for hock and trotters then this amount should be subtracted from 13</i>	1
2(c)(ii)	protein		1
Total			14

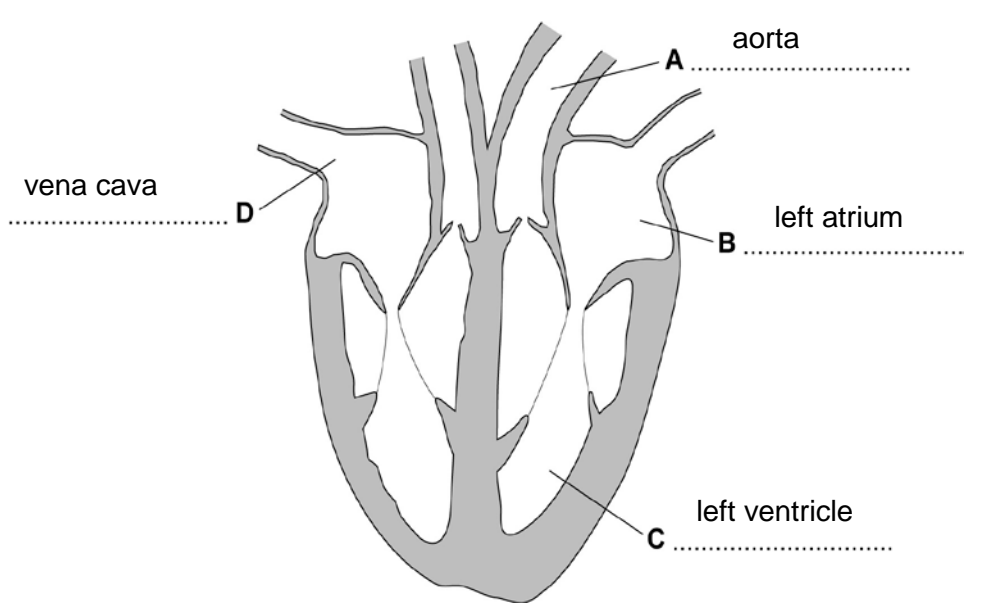
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Question 3

question	answers	extra information	mark
3(a)	any one from: <ul style="list-style-type: none"> prevent contamination restrict access preserve evidence 	ignore references to health & safety <i>accept prevent tampering</i>	1
3(b)(i)	use tweezers / tape / <i>forceps</i> place in a bag / suitable container label or seal (the bag / container)	<i>ignore protective clothing</i> allow paper bag / <i>test tube</i> <i>do not allow beaker</i>	1 1 1
3(b)(ii)	microscope	<i>any named microscope</i> <i>eg comparison / polarising / electron</i> <i>ignore magnifying glass</i>	1
3(b)(iii)	any two from: <ul style="list-style-type: none"> cross section / shape diameter / width / thickness pattern / lines / marks type of fibre / <i>material</i> twist / texture colour 	<i>ignore structure</i> ignore size or length ignore detail	2
3(b)(iv)	may not have picked up / <i>dropped</i> the fibres or could have swapped clothing	no mark for yes / no <i>accept different / changed clothes</i>	1
Total			8

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Question 4

question	answers	extra information	mark
4(a)	<p style="text-align: center;">Part of the blood</p> <div style="display: flex; flex-direction: column; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Platelets</div> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Red blood cell</div> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">White blood cell</div> </div>	<p style="text-align: center;">Function</p> <div style="display: flex; flex-direction: column; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Transports substances</div> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Helps to protect the body from disease</div> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Carries oxygen</div> <div style="border: 1px solid black; padding: 5px; width: 150px; text-align: center;">Helps to heal cuts</div> </div> <p style="text-align: right; margin-top: 20px;"><i>1 mark for each line extra from Part of the blood cancels the mark</i></p>	3
4(b)(i)	<div style="text-align: center;">  </div> <p style="margin-top: 20px;"><i>1 mark for each structure correct</i> right atrium and right ventricle for B and C = 1 mark ignore double headed arrows</p>		4

AASC2F**Question 4 continued**

4(b)(ii)	the body	allow body organs named but not the lungs	1
4(c)(i)	energy / respiration		1
4(c)(ii)	capillaries / <i>capillary</i>		1
Total			10

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Question 5

question	answers	extra information	mark
5(a)(i)	any two from: <ul style="list-style-type: none"> obesity / become overweight heart disease / strokes / heart attack / <u>blocked arteries</u> / high blood pressure diabetes <u>increased</u> cholesterol 	ignore get fat allow heart failure ignore heart problems / cancer / veins / other medical conditions / ignore blood clot allow arthritis	2
5(a)(ii)	sugar / glucose / sucrose / fructose salt	ignore carbohydrates allow sodium	1 1
5(b)	any one from: <ul style="list-style-type: none"> advertisements / promotions / TV / radio / newspapers / 'happy meals' / gift / toys cheap food open all hours / widespread availability / free delivery tasty food (because of the high fat, salt , sugar content) 	accept instant availability allow quick and easy allow (additives used) to improve the appearance / flavour	1
5(c)	different sex different amount of exercise / work / activities done different BMR / rate of growth	allow different lifestyles allow reasonable suggestion that affects BMR eg more muscle / illness / pregnancy not asthma / diabetes / disorder ignore BMI / different height / builds ignore smoking	1 1 1
5(d)(i)	contains a lot of vitamin (C / B)	allow vitamin C is over 100% of daily allowance	1
5(d)(ii)	3.6		1
Total			10

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Question 6

question	answers	extra information	mark
6(a)		<i>plaster of Paris given with incorrect procedure = 1 mark</i>	
	place a frame / border around the print	<i>procedure in wrong order = max 2 marks</i>	1
	pour / add <u>plaster of Paris</u> (liquid)	<i>ignore cordon off</i>	1
	leave to dry / set / harden	<i>ignore times</i>	1
6(b)	unique to the shoe		1
6(c)(i)	pH range 4 – 6.99	any number between and including 4 and 6.99 <i>ignore units</i>	1
6(c)(ii)	<i>mass of water in soil = 0.53g</i>		1
	<i>mass of soil = 4.21g</i>		1
	<i>12.589 / 12.59 / 12.6</i>	<i>correct answer = 3 marks</i> <i>ignore subsequent rounding</i> <i>allow ecf from clear working shown</i> <i>answers of 14.4.. gains 2 marks</i>	1
Total			8
			Overall mark = 60