

Additional Applied Science A

General Certificate of Secondary Education

Unit **A324/02**: Life Care (Higher Tier)

Mark Scheme for January 2011

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Question		Expected Answers	Marks	Additional Guidance
1	(a)	$45/2.25$ or $45/(1.5)^2$ correct substitution; (1) 20 ; (1)	[2]	correct answer = two marks allow 1 mark for correct working, ignore mathematical error
	(b)	any two from: Ronan is overweight and John is underweight; (1) Ronan should lose weight and John to build his body up; (1) different needs; (1) may be starting with different levels of fitness; (1) one might be a smoker; (1) asthmatic; (1) be injured; (1)	[2]	looking for an appreciation that no two people will have exactly the same exercise requirements because an individual programme is determined by the physical, mental and health status of the individual concerned
	(c)	measure a parameter (pulse rate/BMI/breathing rate/blood pressure/weight); (1) before and after / at intervals; (1)	[2]	allow making/keeping records (1) allow step/bleep test (1) repeated (1) progress may be monitored within one session or over several sessions
	(d)	any two from: injury; (1) illness; (1) progress/improvement more than expected (therefore it needs to be more challenging); (1) no progress/improvement less than expected (so has to be toned down); (1) too easy/too hard; (1)	[2]	allow answers in terms of expected weight gain/loss
Total			[8]	

Question		Expected Answers	Marks	Additional Guidance
2	(a)	A humerus; (1) B radius; (1) C ulna; (1)	[3]	
	(b)	X-ray; (1)	[1]	
	(c)	protection; (1) support/framework; (1) attachment of muscles/movement; (1)	[3]	allow store calcium (1) allow gives body shape/holds body up/helps us stand (1) ignore keep in shape/provides structure allow the idea that a skeleton enables movement even if there is no direct link to attachment of muscles allow production of (red/white) blood <u>cells</u>
	(d) (i)		[2]	all three lines correct = 2 marks two or one line correct = 1 mark

Question		Expected Answers	Marks	Additional Guidance
	(ii)	any one of: expose himself to more sunshine; (1) take a winter holiday in the sun; (1) take vit D supplements; (1) cod-liver oil tablets; (1) eat fish/diary product; (1) drink milk;(1) take calcium supplements;(1)	[1]	allow any sensible proposal to increase his vit D or calcium content
	(iii)	advantage: (1) it will increase his vit D level / so he will absorb calcium more efficiently / he will make stronger bones / so less likely to break/damage them; disadvantage: (1) this will depend on the suggestion made in ii for example, greater exposure to sun and reduced use of sun screen / may increase risk of skin cancer or if dietary source / supplements, then will have to consume a large amount due to the relatively small amount of vit D available this way/ only 10%;	[2] [1]	look at all of doctor's advice to link to advantage/disadvantage allow causes sunburn allow may be vegetarian (only if doctors advice includes eat more fish) allow lactose intolerant allow may be allergic
Total			[12]	

Question			Expected Answers	Marks	Additional Guidance
3	(a)	(i)	any two from: pus; (1) faeces; (1) vomit; (1) saliva; (1) tissue sections; (1)	[2]	not blood or urine allow semen/skin/mouth swab/nose swab/hair
		(ii)	sterilise skin/sterile needle; (1) locate/use <u>vein</u> ; (1) any one from: tighten band around top of arm; (1) insert needle;(1) withdraw blood; (1) cover with plaster (1)	[3]	not any reference to withdrawing blood from an artery or inserting a syringe allow antiseptic for sterilisation ignore disinfectant
		(iii)	any two from: malaria; (1) pregnant; (1) diabetes; (1) (sickle cell) Anaemia; (1) cancer; (1) heart attack; (1)	[2]	allow any sensible diagnosis possible with blood including blood group/alcohol level/AIDS/named suitable infection must be a diagnosis not a measurement eg do not allow low blood sugar
	(b)		any three from: monitor national trends; (1) free; (1) plan suitable health care; (1) allocation of resources as appropriate; (1) campaigns to improve public health; (1)	[3]	
			Total	[10]	

Question		Expected Answers	Marks	Additional Guidance
4	(a)	<p>the overall number of new cases of HIV is dropping; (1)</p> <p>public health campaigns aimed to raise awareness; (1)</p> <p>people more aware, so take more care; (1)</p> <p>less people will contract HIV; (1)</p> <p>it will save money in the long term; (1)</p>	[3]	
	(b)	<p>any three from:</p> <p>cost of treatment; (1)</p> <p>availability of drug treatment; (1)</p> <p>poor health service; (1)</p> <p>lack of public information campaigns/education; (1)</p> <p>no condom use; (1)</p> <p>unprotected sex; (1)</p>	[3]	<p>allow lack of hospitals</p> <p>allow lack of doctors</p> <p>not no contraception</p>
		Total	[6]	
		Paper Total	[36]	

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