

Mark Scheme (Results)

January 2009

GCE

GCE O level Human Biology
7042/01

Question Number	Answer	Mark
1(a)	<p>1 mark for each correct answer.</p> <ul style="list-style-type: none"> • retina; • ciliary body; • tympanum; • cochlea; • optic nerve; • ossicles; • semi-circular canals; • iris; 	(8)

Question Number	Answer	Mark
1(b)	<p>1 mark for correct answer. 1 mark each</p> <ul style="list-style-type: none"> • stereoscopic vision/ combines images/ 3D; • (brain needs information from two eyes) to judge distances; • and speed; 	(3)

(Total 11 marks)

Question Number	Answer	Mark
2(a)	<p>1 mark for correct answer.</p> <ul style="list-style-type: none"> • photosynthesis; • sunlight / sun / light; • chlorophyll; • surface area / surface / area/eq; • carbon dioxide; • water; • glucose / sugar / carbohydrate; • starch/eq; 	(8)

Question Number	Answer	Mark
2(b)	<p>1 mark for each correct answer from any of the following - maximum 2 marks.</p> <ul style="list-style-type: none"> • carbon dioxide diffuses into leaf; • short distance if thin; • more efficient diffusion / diffusion only efficient/ easier diffusion over short distances; • more/easy efficient light penetration; 	(2)

(Total 10 marks)

Question Number	Answer	Mark
3 (a)	1 mark for each correct answer. <ul style="list-style-type: none"> • A = ovary; • B = fallopian tube/oviduct; • C = uterus; • D = cervix; 	(4)

Question Number	Answer	Mark
3 (b)	1 mark for each correct answer. <ul style="list-style-type: none"> • E; • A; • B; • C; 	(4)

Question Number	Answer	Mark
3 (c) (i)	1 mark for each correct answer. <ul style="list-style-type: none"> • large number of sperms increases chances; • not all/ small percentage of sperm reach point of fertilisation; 	(2)
3 (c) (ii)	Any two pairs, 2 marks each <ul style="list-style-type: none"> • sperm has tail; • for swimming; • ovum larger / has more cytoplasm; • food store; • sperm has an acrosome; • enzyme to penetrate ovum; • mitochondria; • energy for swimming; 	(4)

(Total 14 Marks)

Question Number	Answer	Mark
4(a)	Any two, 1 mark each <ul style="list-style-type: none"> • wider blood vessels/capillaries/ vasodilation / more blood in capillaries; • hair flatter/ erector muscle relax; • increased sweat/ sweat production; 	(2)

Question Number	Answer	Mark
4(b)	1 mark for each correct answer from any of the following - maximum 3 marks. <ul style="list-style-type: none"> • prevents entry of bacteria / microorganisms / pathogens; • protects against UV light; • prevents loss of water / dehydration; • waterproof / prevents entry of water/chemicals; • reference to temperature control; • protection from rain/ damage by nerve endings; 	(3)

Question Number	Answer	Mark
4(c)	1 mark for correct answer <ul style="list-style-type: none"> • enzymes / respiration affected / constant metabolism; 	(1)

(Total 6 Marks)

Question Number	Answer	Mark
5(a)(i)	1 mark for correct answer. <ul style="list-style-type: none"> ribs/ rib cage; 	(1)
5(a)(ii)	1 mark for each correct answer from any of the following - maximum 2 marks. <ul style="list-style-type: none"> muscle attachment (linked to breathing); protect lungs or heart (from physical damage); red blood cell formation; 	(2)

Question Number	Answer	Mark
5(b)(i)	1 mark for correct answer. <ul style="list-style-type: none"> line to shoulder / hip; 	(1)
5(b)(ii)	1 mark for correct answer. <ul style="list-style-type: none"> line to knee / elbow; 	(1)
5(b)(iii)	1 mark for each correct answer. <ul style="list-style-type: none"> greater movement allowed/ movement in 3 planes/ 360°; couldn't rotate arms / walk properly/ movement in one plane; 	(2)

Question Number	Answer	Mark
5(c)	1 mark for each correct answer. <ul style="list-style-type: none"> attach bone to muscle; transmit pull of muscle; 	(2)

Question Number	Answer	Mark
5(d)	1 mark for each correct answer from any of the following - maximum 2 marks. <ul style="list-style-type: none"> biceps contracts/ shortens/ acts as flexor; elbow acts as a hinge / pivot / eq; attached to radius / lifts radius/ pulls radius; 	(2)

(Total 11 Marks)

Question Number	Answer	Mark
6(a)(i)	1 mark for correct answer. <ul style="list-style-type: none"> • A; • C; • B; 	(3)
6(a)(ii)	1 mark for each correct answer from any of the following - maximum 3 marks <ul style="list-style-type: none"> • valves in veins; • direction of blood flow; • speed of flow; • pressure of blood; • deeper arteries; • pulsatile flow in arteries; • type of blood qualified; 	(3)

Question Number	Answer	Mark
6(b)(i)	1 mark for correct answer. <ul style="list-style-type: none"> • capillary; 	(1)
6(b)(ii)	1 mark for each correct answer from any of the following - maximum 2 marks. <ul style="list-style-type: none"> • diagram roughly circular with one ring inside; • large lumen; • thin/single cell wall; 	(2)

Question Number	Answer	Mark
6(c)(i)	1 mark for correct answer. <ul style="list-style-type: none"> • right ventricle; 	(1)
6(c)(ii)	1 mark for correct answer. <ul style="list-style-type: none"> • pulmonary vein; 	(1)

(Total 11 Marks)

Question Number	Answer	Mark
7(a)	1 mark for each correct answer from any of the following - maximum 2 marks. <ul style="list-style-type: none"> • maintain constant / within narrow limits/ steady; • internal environment/ in the body; • despite external changes / internal changes; 	(2)

Question Number	Answer	Mark
7(b)(i)	1 mark for each correct answer. <ul style="list-style-type: none"> • A = insulin; • B = glucagon / adrenaline; (spelling of glucagon must be correct) 	(2)
7(b)(ii)	1 mark for correct answer. <ul style="list-style-type: none"> • secreted into / carried by blood/ from endocrine gland; 	(1)

Question Number	Answer	Mark
7(c)	1 mark for each correct answer. <ul style="list-style-type: none"> • meal eaten / digested; • glucose absorbed; 	(2)

Question Number	Answer	Mark
7(d)(i)	1 mark for correct answer. <ul style="list-style-type: none"> • glycogen; (spelling must be correct) 	(1)
7(d)(ii)	1 mark for each correct answer. <ul style="list-style-type: none"> • liver; • muscle; 	(2)

Question Number	Answer	Mark
7(e)	1 mark for correct answer. <ul style="list-style-type: none"> • respiration; (not breathing) 	(1)

Question Number	Answer	Mark
7(f)	1 mark for correct answer. <ul style="list-style-type: none"> • conversion of (stored) glycogen / X (into glucose); 	(1)

Question Number	Answer	Mark
7(g)	1 mark for each correct answer from any of the following - maximum 3 marks. <ul style="list-style-type: none"> • water removed; • by osmosis; • because of high(er) water potential in red blood cell/ lower in plasma; • red blood cells shrink; 	(3)

(Total15 Marks)

Question Number	Answer	Mark
8(a)	1 mark for each of set of three bars correctly plotted;;	(2)

Question Number	Answer	Mark
8(b)(i)	1 mark for correct answer. <ul style="list-style-type: none"> coalminer; 	(1)
8(b)(ii)	1 mark for correct answer. <ul style="list-style-type: none"> female baby; 	(1)
8(b)(iii)	1 mark for each correct answer from any of the following - maximum 3 marks. <ul style="list-style-type: none"> coal miner more / very active / baby less / not active/ more work; coal miner uses muscles / lot of muscular activity; more energy required; ref. differences in body size; 	(3)

Question Number	Answer	Mark
8(c)	1 mark for each correct answer. <ul style="list-style-type: none"> males require more energy; (general point) any relevant comparison from table; (quoting figures) 	(2)

Question Number	Answer	Mark
8(d)(i)	1 mark for each correct answer from any of the following - maximum 2 marks. <ul style="list-style-type: none"> pregnant woman only requires 10 300kJ; little more than other females/ less than female teenager; put on excess weight if eat twice as much; 	(2)
8(d)(ii)	1 mark for correct answer. <ul style="list-style-type: none"> enrich diet with vitamins / minerals / folic acid/iron / protein; 	(1)

(Total 12 Marks)

