



Rewarding Learning

**General Certificate of Secondary Education
2011–2012**

Science: Single Award (Modular)

Human Activity and Health
Module 2

Foundation Tier

[GSC21]

**TUESDAY 15 MAY 2012
9.15 am–10.00 am**

**MARK
SCHEME**

			AVAILABLE MARKS
1	(a) Fungi – Athlete’s foot; Bacteria – Gonorrhoea	[2]	5
	(b) lung cancer – emphysema – carbon monoxide	[3]	
2	(a) (i) 23	[1]	6
	(ii) 155 and 157	[1]	
	(iii) small gradations/no discrete groups/many bars	[1]	
	(iv) [all] taller/most common height(s) taller/bars move to right	[1]	
	(b) both bars correct = 2, one bar correct = 1	[2]	
3	(a) (i) large mesh sizes/C	[1]	7
	(ii) sanctuaries where fishing not allowed; limiting the number of fishing days	[2]	
	(iii) nitrate pollution/oil spillages/sewage/slurry/silage	[1]	
	(b) (i) SO ₂ dissolves/(acid rain) forms/in clouds; clouds move	[2]	
	(ii) filters/alternative fuels/(burning) less fossil fuels	[1]	
4	(a) better diets	[1]	6
	(b) (i) fungus killed/stopped growth of bacteria; substance diffusing	[2]	
	(ii) penicillin	[1]	
	(c) MRSA (allow <i>C. difficile</i>) – resistant	[2]	
5	(a) boiling the broth/strongly heating	[1]	6
	(b) Yes No No (all 3 correct = 2; 2 correct = 1)	[2]	
	(c) same temperature; same type of broth	[2]	
	(d) Pasteur	[1]	

			AVAILABLE MARKS	
6	(a)	(i) Passive – injection of antibodies/mother’s milk; Active – catching the disease/named disease/illness	[2]	8
		(ii) passive immunity is faster acting; passive immunity lasts for a shorter period of time/not permanent	[2]	
	(b)	(i) antibodies same shape/complementary to antigens; combine with antigen/microbe; clump bacteria together/stop them spreading in body	[3]	
		(ii) phagocytosis	[1]	
7	(a)	(i) extent of ice platform decreases with time	[1]	7
		(ii) ice platform decreases/less ice/ice melting; increased carbon dioxide levels in atmosphere/traps heat; increased combustion/deforestation/reduced photosynthesis	[3]	
	(b)	(i) ice too thin [to support weight]/ice breaks/polar bears too heavy	[1]	
		(ii) endangered/extinct	[1]	
		(iii) non-living factor	[1]	
		Total		