

QUESTIONSHEET 1

- (a) 6 correct plots;;
bars labelled with country; 3
- (b) USA; 1
- (c) $45 \times 35 =$;
1575; 2

TOTAL 6**QUESTIONSHEET 2**

- (a) 3 of:
reduce intake of fat;
lose weight;
stop smoking;
exercise;
reduce alcohol intake; 3
- (b) (i) 100; 1
- (ii) 104; 1
- (iii) 120; 1
- (iv) $\frac{2}{3}$; 1
- (c) deaths increase with age up to age 65 - 74;
then fall; 2

TOTAL 9**QUESTIONSHEET 3**

- (a) 0.2 seconds; 1
- (b) 0.15 seconds; 2
- (c) increasing alcohol level increases reaction time; 1
- (d) alcohol slows reactions;
less liable to respond quickly to dangerous situations;
increased chance of accident; 3

TOTAL 7

QUESTIONSHEET 4

- | | | | |
|-----|-------|--|---|
| (a) | (i) | 70; | 1 |
| | (ii) | 5; | 1 |
| | (iii) | Introduction of immunisation; | 1 |
| (b) | | both show rapid increase; | 1 |
| (c) | | 1950 | 1 |
| (d) | | both caused by microbes/both affect the lungs; | 1 |

TOTAL 6

QUESTIONSHEET 5

- | | | |
|-----|---|---|
| (a) | 2 of: fungi;
virus
protozoa; | 2 |
| (b) | (bacterial cell) consists of cell wall;
around a cell membrane;
cytoplasm present;
with genes; | 4 |
| (c) | 2 of:
reproduce rapidly in the body;
produce toxins/poisons;
viruses damage cells in which they reproduce: | 2 |
| (d) | blood;
skin;
breathing organs/named part; | 3 |

TOTAL 11

QUESTIONSHEET 6

(a)	(i)	calcium/vitamin D	1
	(ii)	vitamin C	1
(b)	(i)	leg bones bend; since unable to support body weight	2
	(ii)	bleeding gums; wounds do not heal properly;	2
(c)	(i)	2 of: pale; tired;	2
	(ii)	women lose iron; during menstruation;	2
	(iii)	2 of: shortage of haemoglobin; reduces amount of oxygen which can be carried by blood; leading to lowered rate of energy release;	2
			TOTAL 12

QUESTIONSHEET 7

(a)	A - white blood cell/phagocyte:	1	
	B - red blood cell:	1	
(b)	C;	1	
(c)	destroy antigens/microbes;	1	
(d)	microbes are ingested; and destroyed:	2	
(e)	start the process of blood clotting; which prevents microbes entering the body;	2	
			TOTAL 8

QUESTIONSHEET 8

- (a) (i) A 1
- (ii) C 1
- (b) antibiotic diffuses/passes into agar;
and kills bacteria; 2
- (c) inoculate plated with food poisoning bacteria;
soak filter paper discs in range of strengths of antibiotic A;
incubate for same time;
at same temperature;
find lowest strength which kills bacterium 5
- TOTAL 9**

QUESTIONSHEET 9

- (a) Poliomyelitis; 1
- (b) Food poisoning; 1
- (c) Caused by bacteria; 1
- (d) bacteria in lungs of infected person;
breathed out/coughed/sneezed out;
bacteria/infected droplets breathed in by another person. 3
- TOTAL 6**

QUESTIONSHEET 10

- (a) 3 of:
heroin;
cocaine;
barbiturates;
LSD; 3
- (b) body undergoes chemical changes as a result of taking the drug; 1
- (c) 2 of:
severe abdominal pains;
sweating;
muscular tremors; 2
- (d) drug addicts often turn to crime to fund habit;
often unable to hold down a steady job; 2
- TOTAL 8**

QUESTIONSHEET 11

(a)	(i)	5 days;	1
	(ii)	25 days;	1
(b)		Passive;	1
(c)		20 days;	1
(d)	(i)	passive;	1
	(ii)	provides immunity faster;	1
(e)		by injection of antibodies;	1
			TOTAL 7

QUESTIONSHEET 12

(a)	(i)	C: 20 units; smallest number of units giving the greatest effect on plaque bacteria;	2
	(ii)	Antiseptic inactivates bacteria; fewer bacteria produce less acid so less damage to enamel;	2
	(iii)	Alkali neutralises the acid so less enamel damaged;	1
(b)		Brushing removes some plaque bacteria/ food particles/ sugar used by bacteria; toothpaste is abrasive and helps remove plaque; fluoride strengthens enamel so less easily dissolved; (not strengthens teeth) passive;	3
			TOTAL 8

QUESTIONSHEET 13

(a)	(i)	growth of bacteria/ microbes;	1
(b)	(i)	tube A;	1
	(ii)	meat broth not sterilised; bacteria reproduce rapidly in broth;	1 1
(c)	(i)	B and E;	2
	(ii)	B - no bacteria present and none able to enter foil; E - no bacteria present and glass tube traps bacteria from air;	1 1
			TOTAL 8

QUESTIONSHEET 14

(a)	(i)	infectious disease;	1
	(ii)	cancer;	1
(b)		fewer people died from infectious diseases in 1988 than in 1958; more people died from cancer in 1988 than in 1958; more people died from circulatory disease 1988 than in 1958; (allow other valid differences)	3
(c)	(i)	greater availability of antibiotics in 1988 than in 1958/ ref more vaccinations; thus infectious/ bacterial diseases can be controlled better;	2
	(ii)	more carcinogens in environment/ radiation thus more mutation/ cancer caused; fewer die from infection so live longer to die from of cancer/ ref smoking;	2
	(iii)	more fat in diet/ more refined diet/ more cholesterol eaten; people more sedentary/ less exercise/ ref smoking;	2
			TOTAL 11

QUESTIONSHEET 15

(a)		2 of: deposit in lumen of artery with atherosclerosis; reduced diameter of lumen; irregular shaped lumen;	2
(b)	(i)	blood flow reduced;	1
	(ii)	reduced space/ lumen for flow;	1
(c)		reduced blood flow to heart muscle;	1
		less oxygen to heart muscle;	1
		heart muscle/ part of muscle dies;	1
		leading to heart attack;	1
			TOTAL 8

QUESTIONSHEET 16

(a)	(i)	bacterium;	1
	(ii)	in contaminated water;	1
(b)	(i)	Cells dry out/ dehydration;	1
	(ii)	replaces water/ fluid;	1
	(iii)	antibiotics kill bacteria;	1
(c)		antibiotics do not affect viruses/ cannot enter cells where viruses are;	1
(d)	(i)	Any one of: too many may be toxic/ cause allergies/ too many may kill too many helpful gut bacteria/ too little may not kill all bacteria;	1
	(ii)	some bacteria might survive/ resistant bacteria might survive and re-infect;	1
			TOTAL 8

QUESTIONSHEET 17

(a)	(i)	virus;	1
	(ii)	bacterium;	1
	(iii)	virus;	1
	(iv)	bacterium;	1
	(v)	fungus;	1
	(vi)	bacterium;	1
			TOTAL 6

QUESTIONSHEET 18

(a)	(i)	4;	1
	(ii)	1;	1
	(iii)	3;	1
	(iv)	2;	1
	(v)	5;	1
			TOTAL 5

QUESTIONSHEET 19

- (a) Any two of:
contamination by bacteria causing food poisoning/
production of toxins into food by growth of micro-organisms/
natural deterioration due to enzymes/ oxidation;; 2
- (b) (i) keep out oxygen from the air/ stop oxygen in air entering the tube; 1
- (ii) bacteria increased in number/ multiplied;
more bacteria used up more oxygen; for respiration; 3
- (iii) C, A, B; 1
- (c) (i) bacteria unable to multiply without air/ oxygen; 1
- (ii) bacteria unable to grow/ survive without water; 1
- (iii) process involves heat sterilisation which kills all the bacteria; 1
- TOTAL 10**

QUESTIONSHEET 20

- (a) (i) 30 x 1500;
4500 cm³; (units must be included) 1
1
- (ii) removes more carbon dioxide; 1
brings in extra oxygen; 1
- (b) (i) more exercise, the fewer breaths per minute at rest
and during exercise; 1
more exercise, the greater volume of each breath at rest and during exercise; 1
smaller increase in number of breaths per minute when exercising; 1
- (ii) greater air flow prevents build up of bacteria/ viruses/ pathogens in lungs; 1
- TOTAL 8**