

1. (a) droplets/ref. coughing/sneezing;
which are breathed in/taken in through gas exchange system/nose/lungs;
OR
milk;
drunk/taken into digestive system; 2
- (b) 2500×20.066 ;
 $= 50165$; 2
allow 1 mark if correct working shown
- [4]**
2. (a) (i) single source of infection / one incubation period / not
transmitted from one individual to another; 1
- (ii) transmitted from individual to individual / several
incubation periods; 1
- (b) ORT / rehydration / water / fluid intake;
with salts / minerals; 2
- [4]**
3. (a) (i) principle of calculating percentage change;
6.25%;
(*correct answer gains 2 marks*) 2
- (ii) decrease in number of vaccinations / vaccination ineffective /
side effects of vaccination / resistance to antibiotics /
new strains / mutants; 1
- (b) cilia move mucus / bacteria / debris;
(build up of) mucus / irritants stimulates coughing /
coughing to remove mucus; 2
- [5]**
4. (a) (i) Prevents blood flow to part of heart muscle;
insufficient oxygen; 2
- (ii) Myocardial infarction results in damage to muscle cells;
enzyme released into blood when cells are damaged; 2

- (b) Risk factor is a factor correlated with/thought to cause a particular condition;
cholesterol;
high cholesterol is correlated with/thought to cause heart disease; Max 2

[6]

5. (a) (i) fall in deaths due to rise in number of people with immunity /
better care / targeting vaccination at vulnerable; 1

- (ii) mutation of virus / new strain;
mutant form not recognised by memory cells (*allow antibodies*); 2 max

- (b) (i) T lymphocyte receptors recognise shape of haemagglutinin /
neuraminidase / viral antigen;
clone (*once only*);
destroy virus; 2 max

- (ii) clone (*once only*);
produce antibodies;
effect of antibody e.g. stimulation of phagocytosis /
precipitation of toxins; 2

- (c) alter shape of active site of neuraminidase / block active site;
virus unable to leave host cells; 2

[9]

6. (a) Publicity about vaccination / better health education / risks of 'flu epidemics;
(*Accept: now free on NHS (though only since 2000) / better awareness /
more commonly available*) 1

- (b) (i) 1990: 26% of 7.4million = 1.92million *and*
2000: 64% of 7.8 million = 4.99million;
increase = 3.07 million; 2
(*Correct reading of all 4 figures from graph = 1*)
(*Correct answer but no 'millions' = 1*)
(*Correct method resulting from wrong graph reading = 1*)

- (ii) Over 50% of population being vaccinated;
But only from 2000 onwards; 2
(*Principle of more people being vaccinated each year = 1*)

- (iii) Different strain/type of virus each year / virus mutates;
With different antigens;
Influenza antibodies / memory cells (rapidly) destroyed /
need replacing; max 2
- (c) (Protein coat) carries antigens;
Stimulates B-cells / production of antibodies;
Production of memory cells; max 2

[9]