

(Communicable diseases (bacterial, viral, fungal, protist))

Q1.a)(2018)

**toxins / poisons (secreted by /
from / in bacteria)**

Q1.b)(2018)

any **two** from:

- wash hands after using toilet / being sick
- or**
- wash hands before preparing / handling food
- or**
- do not prepare food (whilst infected)
- isolate yourself
- disinfect clothes / surfaces
- do not share utensils / cutlery / towels

Q1.c)(2018)

antibiotics

Q1.d)(2018)

immune system is damaged /
weakened **or** immune system
doesn't function properly

white blood cells cannot kill
bacteria / *Salmonella* (as
effectively)

Q1.e)(2018)

any **one** from:

- (give chickens) antibiotics
- don't sell infected chickens / eggs
- keep infected chickens isolated / indoors
- slaughter the infected chickens

Q2.(2019)

a protist

Q2.a)(2019)

lower percentage of people with malaria when using (mosquito) nets

Q2.b)(2019)

any **one** from:

- some people who use (mosquito) nets have malaria
 - data from only one area / part of Africa
 - size of group too small **or** sample size too small
 - **or** only 476 people
 - only 50 people did not use (mosquito) nets
 - **or** uneven group sizes (nets vs. no nets)
 - no other information about people considered
-
- people may have lied about using (mosquito) nets

Q2.c)(2019)

any value between 88 – 91

Q2.d)(2019)

any **one** from:

- improved health care
-
- use of mosquito control methods
-
- changing behaviour to avoid being bitten (by mosquitoes)

Q2.e)(2019)

prevents pathogens from entering**skin**

- tough / dry / dead outer layer
- skin acts as a barrier
- sebum / oil on (surface of) skin
- sebum / oil repels pathogens
- scabs form over cuts **or** scabs form a barrier
- platelets are involved in forming clots / scab

stomach

- contains (hydrochloric) acid
- (HCl) kills bacteria
- in food **or** in swallowed mucus

eyes

- produce tears
- contains enzymes to kill bacteria
- tears are antiseptic

breathing system

- trachea / bronchi / nose produce mucus
- mucus is sticky
- (mucus) traps bacteria
- (mucus) carried away by cilia

defends itself against pathogens inside the body

- immune system / white blood cells (WBCs)
- WBCs engulf pathogens
- antitoxins are produced
- (antitoxins) neutralise toxins / poisons (produced by pathogen)
- antibodies are produced
- (antibodies) help destroy pathogens
- memory cells (are formed)
- (memory cells give a) more rapid response if pathogen re-enters

a **level 2** response should refer to body defence **and** the immune system

Q3.(2022)

rose black spot

Q4.(2022)

$$\frac{24 \times 60}{90}$$

or

$$\frac{24}{1.5}$$

16

Q5.(2022)

any **one** from:

- sexual contact / intercourse
- exchange of body fluids

Q6.a)(2022)

(number of cases) in women
decreases then increases, then
decreases

(number of cases) in men
increases then decreases

Q6.b)(2022)

any **one** from:

- better education (into prevention of spread of HIV)
- condoms more widely available **or** condoms easier to source **or** condoms cheaper
- new / better drugs (to prevent HIV infection / spread)
- better / more testing / identification (of people with HIV)

Q6.c)(2022)

$$\frac{242}{1288}$$

0.1878...

0.188 (:1)

Q6.d)(2022)

any **one** from:

- calculate as a percentage
- give the numbers per 100 000 people

Q6.e)(2022)

inactive HIV / virus is injected
(into bloodstream / muscle /
body)

white bloods cells produce
antibodies (against inactive
virus)

(if infected with HIV) correct /
specific antibodies are produced
quickly

antibodies destroy the (active)
virus / HIV

Q6.f)(2022)

HIV / antigen / protein injected
into mouse

extract / collect (mouse)
lymphocytes that make a
specific antibody to HIV /
antigen / protein

lymphocytes are combined with
a tumour cell to create a
hybridoma

(hybridoma) cloned to create
many cells that produce the
antibody

Q6.g)(2022)

monoclonal antibody is
complementary / specific to HIV
antigen

monoclonal antibodies attach to
(all the) HIV antigens

(so) HIV cannot bind to (human)
cell

or

(so) HIV genetic material cannot
enter (human) cell

Q7.a)(2023)

(bacteria) release / produce
toxins

Q7.b)(2023)

Vaccination of animal

- (animal's) white blood cells / lymphocytes produce antibodies (against *Salmonella* / vaccine / antigens)
- antibodies are specific / complementary / correct to *Salmonella* / antigens
- (specific) antibodies bind to *Salmonella* / antigens

Secondary response in animal

- if infected (specific) antibodies are produced quickly **or** in large numbers
- (so) white blood cells **or** antibodies would kill (live) *Salmonella*
- (so) fewer / no bacteria / pathogens / *Salmonella* in animals **or** in animal products (meat / milk / eggs)

Prevention of food poisoning in humans

- (so) fewer / no bacteria / pathogens / *Salmonella* eaten **or** in (named) food
- (so) number of bacteria never reaches a high enough level for infection to develop
- (so) fewer toxins produced (in humans).

For **Level 2** students must link immune response in animals to prevention of an outbreak in humans.

Q8.(2023)

vector

Q9.(2024)

nucleus