

Mark schemes      Total: 34 marks

Grade 5: 60%

Grade 4: 50%

Grade 3: 37%

Grade 2: 26%

Grade 1: 14%

21 = grade 5

17 = grade 4

13 = grade 3

8 = grade 2

5 = grade 1

**Q1.**

(a) gonorrhoea

1

(g) coughs / sneezes (spread virus in droplets)

*allow breathing out (spreads virus in droplets)*

1

droplets / virus are inhaled

*allow droplets / virus are breathed in*

*ignore contact with infected person unqualified*

1

*assume 'it' refers to the virus*

*allow touch a contaminated surface **and** then*

*touch your mouth / nose / eyes for **1** mark*

*if no other marks awarded allow kissing for **1** mark only*

(h)  $\frac{17}{100} \times 67\,961\,900$

*allow 0.17 x 67 961 900*

1

= 11 553 523

*allow 11 553 500*

1

(i) any **one** from:

- dry feet **thoroughly** (after washing)

*allow use foot powder*

*ignore keep feet dry*

*ignore wash feet regularly*

- do not share socks / tights / shoes / towels
- use a fungicide  
*allow named fungicide*  
*allow wear silver(-impregnated) socks*
- do not walk around barefoot in public / contaminated areas  
*allow wear flip flops in public / contaminated areas*  
*ignore avoid moist conditions*

1

[14]

## Q2.

(a) fungus

1

(b) less / no chlorophyll

**or**

chlorophyll has been broken down

*allow reference to chloroplasts for chlorophyll*

1

(c) less photosynthesis

**or**

less light absorbed

1

(so) less glucose / sugar formed

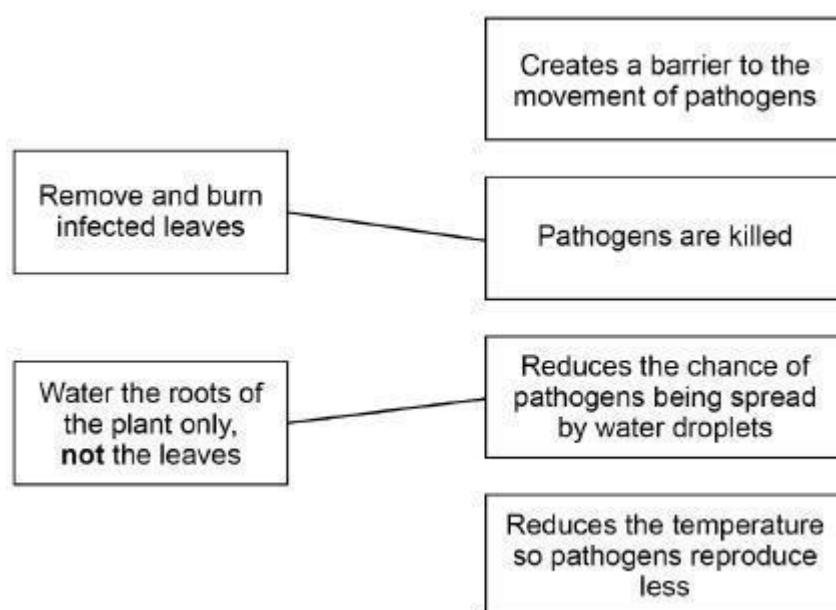
1

**or**

less light absorbed (1)

(so) less photosynthesis (1)

(d)



	<i>extra line from a box negates that box</i>	2
(e)	virus	1
(f)	by mosquito <b>bites</b> <i>allow by mosquitos</i>	1
(g)	drain water from swamps	1
		<b>[9]</b>

### Q3.

(a)	both have a cell membrane	1
	both have cytoplasm	1
(b)	any <b>one</b> from: <ul style="list-style-type: none"> <li>fever <i>allow high temperature / sweating / chills</i></li> <li>abdominal / stomach cramps <i>ignore vomiting / sickness / diarrhoea</i> <i>ignore feel unwell unqualified</i> <i>ignore rashes</i></li> </ul>	1
(c)	penicillin <i>allow phonetic spelling</i>	1
(d)	any <b>one</b> from: <ul style="list-style-type: none"> <li>only a few bacteria killed so live bacteria continued to reproduce <i>allow bacteria reproducing when course started</i></li> <li>time delay before antibiotic reached bacteria <i>allow takes time (for antibiotic) to travel through the body</i></li> <li>time delay before antibiotic could kill bacteria <i>allow takes time (for antibiotic) to work</i></li> </ul>	1
(e)	there were fewer toxins in the body than at day 0	1
(f)	to reduce / prevent resistant strains / bacteria developing <i>ignore references to bacteria becoming immune</i>	
	<b>or</b>	
	to reduce / prevent antibiotic resistance (in bacteria) <i>allow because they will get better without taking any antibiotics</i> <i>ignore body will fight the infection unqualified</i>	

*allow some infections are caused by viruses*  
*allow because they have been told not to by NHS / NICE*

1

(g) B

1

(h) D

1

[9]

#### Q4.

(a) penicillin

1

(b) any **one** from:

- (yellow / green / white / beige) discharge from vagina / penis

*ignore colour of urine*

*allow yellow / green / white / beige discharge*

- pain on urinating

*ignore pain unqualified*

*allow pain in abdomen*

*allow pain in testes*

*allow inflammation of foreskin*

*allow bleeding between periods*

*allow bleeding after sex*

*allow fever / nausea / vomiting*

1

(c) any **two** from:

- concentration (of antibiotic)

- type of disc

*allow same type of (filter) paper*

- size of disc

- temperature **or** kept at 25 °C

- time **or** kept for 3 days

*allow use sterile Petri dish **or** use sterile agar*

2

(d) B

1

(e) C

1

(f) A

1

(g) any **one** from:

- antibiotics do **not** destroy viruses

*allow antibiotics do **not** kill viruses*

*allow antibiotics **only** kill bacteria*

*allow HIV is a virus*

- *allow HIV is **not** a bacterium*  
viruses are inside cells  
*allow idea that it is difficult to get the antibiotic to the virus*

1

- (h) any **one** from:
- disinfect / sterilise tools / scissors / files  
*allow put tools / scissors / files in fungicide*  
*allow washing / cleaning tools*
  - use a new file for each customer  
*allow use a new tool / scissors for each customer*
  - do not treat people with a fungal nail infection
  - disinfect hands between customers
  - use new gloves for each customer  
*ignore gloves / PPE unqualified*  
*allow wear masks*

1

- (i) any **one** from:
- *allow converse statements*
  - feet are washed less
  - feet are in (more) moist conditions  
*allow idea that less air gets to feet*  
*allow idea that feet are wetter / warmer (inside socks)*
  - feet are (often) warmer  
*allow idea of (bare) feet in contact with the floor*  
*allow idea of sharing footwear*

1

[10]