

# MARK SCHEME

# GCSE

## BIOLOGY

## AQA - TRIPLE SCIENCE

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B 3 - TEST 2

INFECTION

Beginner

## Mark schemes

- 1.** (a) (i) 25°C 1
- (ii) pathogens 1
- (b) **D** 1
- more / most bacteria killed  
*accept biggest area / ring where no bacteria are growing* 1
- (c) viruses live inside cells 1
- [5]
- 2.** (a) phloem 1
- (b) translocation 1
- (c) either:  
less (sugars for) respiration 1  
(so) less energy released 1
- or**  
less amino acids made (1)  
(so) less protein produced **or** less protein synthesis (1)
- or**  
less cellulose made (1)  
(so) weaker cell walls (1)
- (d) (aphids) can fly to another plant **or** part of the plant  
*ignore to fly unqualified* 1
- to get (more) food  
*allow to find a mate*  
*allow idea of less competition for food*  
*allow to escape predators*  
*do **not** accept escape prey* 1

(e) (oil) prevents aphids from attaching to leaf **or** causes aphids to slide off leaf  
*ignore 'the leaf is slippery'*

**or**

idea that oil may harm / kill the aphid

*allow oil may be unpleasant to the aphid*

1

(f) (plant / stem has) thorns

*allow spines / spikes / prickles*

*ignore stings*

*do **not** accept thorns protect (the plant) from predators*

1

(g) C

*if any other letter given then no marks for the question*

1

(fungi / spores) blown by / in direction of the wind

*allow black spot / disease is blown by / in direction of the wind*

**or**

it's the closest plant (to A)

*do **not** accept reference to bacteria / viruses / pollen being blown*

1

(h) any **one** from:

- spread rose bushes out more

*allow isolate the infected plant*

*allow idea of barrier around infected plant*

*ignore separate unless qualified*

- remove any infected parts of the plant

*allow remove infected plant / A*

- use a fungicide

*ignore pesticide*

*do **not** accept insecticides / herbicide*

1

[11]

3.

(a) (i) addictive

*allow addicting / addict / addicted / addiction or similar*

*allow phonetic spelling*

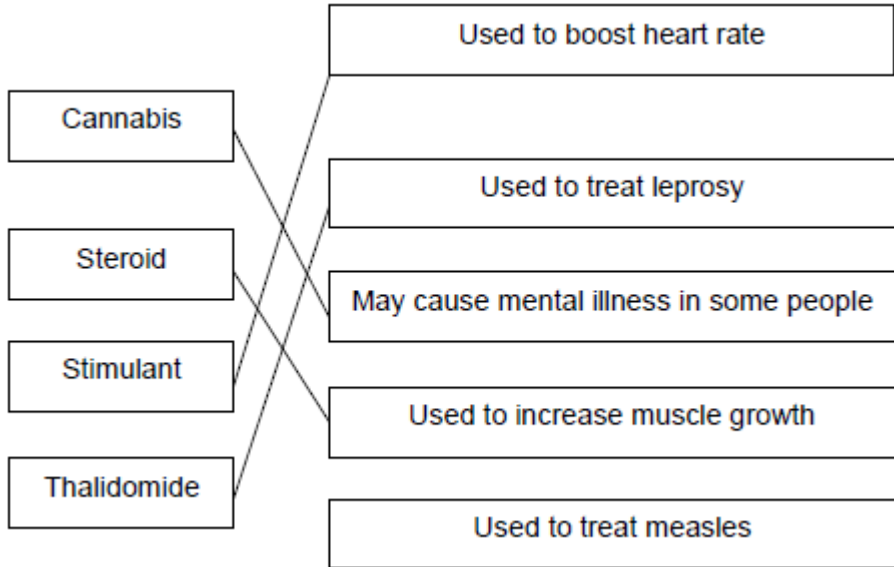
*do **not** accept / additive / addition*

1

- (ii) junction / gap / space between neurones  
*allow nerve cells / nerves for neurones*  
*allow idea where neurones /*  
*nerve cells / nerves meet / join* 1
- (b) (i) tablet with no drug  
*accept answers that convey this idea eg fake / dummy / sugar pill*  
*allow injection with no drug*  
*ignore drugs that don't work.* 1
- (ii) for comparison  
*accept to see if drug / it works*  
*allow to see psychological effect **or** make sure, it is not all in the*  
*mind*  
*allow as a control*  
*ignore 'to make test fair / unbiased'* 1
- (iii) Neither doctors nor volunteers 1
- (iv) any **two** from:
- age (range)
  - sex / gender (mix)
  - previous smoking habits **or** eg number smoked (before trial)  
**or** length of time smoked
  - number in the group
  - other drugs being taken **or** general health **or** height / weight /  
BMI / lifestyle / fitness  
*ignore factors already controlled*  
*ignore reference to all smokers **or** all want to give up* 2
- (c) higher percentage / number of smokers who had stopped smoking (than Drug B)  
*answers must refer to data and be comparative*  
*allow best results / most effective*  
*ignore best drug unqualified*  
*ignore references to 12 weeks / 1 year* 1

[8]

4. (a)



extra line from any drug cancels that mark

4

(b) (i) any **one** from:

- (live) animals  
*accept named examples, eg mice*  
*ignore people / volunteers*
- cells
- tissues  
*do **not** allow plants*

1

(ii) to check that the drug works

1

to find the best dose to use

1

(iii) only scientists at the drug company

1

(c) (i) 420

1

(ii) statin(s)

1

- (iii) any **one** from:
- side effects  
*allow cost*
  - other medication  
*allow patient choice*
  - other (medical) conditions  
*allow family history or age*

1  
[11]

- 5.** (a) measles 1
- mumps 1
- rubella 1
- (b) antibodies 1
- (c) (i) any **two** from:
- fell
  - then rose
  - any reasonable amplification eg until 2004 / to 80%
  - flattens off (between 1999–2000)
- 2
- (ii) eg fear of side effects
- or**
- cost of vaccine
- or**
- lack of vaccine
- or**
- complacency / disease less common
- 1

[7]

- 6.** (a) root 1
- (b) (i) chlorophyll 1

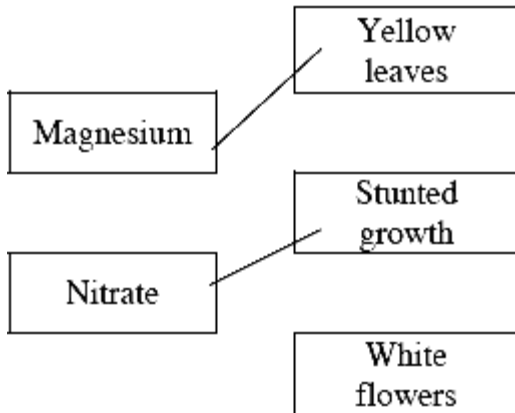
(ii) absorbs / traps / takes in light  
*do not accept attracts / solar energy / sunshine / sun*

1

(for) photosynthesis  
*accept to make food / glucose / sugar/ biomass*

1

(c) **Mineral ion**                      **Effect of its shortage**



*1 mark per correct line  
extra line from a mineral ion cancels the mark*

2

[6]

**7.** (a) antibodies

1

antitoxins

1

antibiotics

1

(b) any **two** from:

- measles
- mumps
- rubella / German measles

2

(c) less / low / no chance of getting named / all condition(s) if vaccinated

1

quantitative figure(s) e.g. 5 times less likely to get convulsions  
*must be comparative*

1

- (d) enzymes 1
- genes 1

[9]

8.

- (a) (i) lives inside cells 1
- (ii) inactive 1
- (iii) antibodies 1
- (b) (i) 1950 1
- (ii) 8 (years) 1
- (iii) any **one** from: eg 1
- disease could be reintroduced (from abroad)  
*disease might come back insufficient*
  - disease would spread if it came back
  - protection on holiday abroad
  - high proportion of immune people needed to prevent epidemic

[6]

9.

- (a) stinging hairs / can sting 1
- (so) this harms herbivores / stops animals eating them 1
- (so) less of the plant is removed / damaged 1
- (b) clove (oil) 1
- it has the largest areas with no bacteria growing  
*allow largest inhibition zone or description of largest inhibition zone* 1
- (c) antibiotics were not tested 1

[6]