B1 Rev Pack 6 markscheme

**M1.**          (a)     decrease in number of deaths (after vaccination started)

**1**

(b)     in correct sequence:

          bacteria

**1**

white blood cells

**1**

antibodies

**1**

**[4]**

**M2.**          (a)     (i)      antibiotic or named antibiotic

*ignore antibodies*

*accept antiseptic*

*do* ***not*** *accept disinfectant*

**1**

(ii)     painkillers

*accept named painkillers eg aspirin*

**1**

(b)     (i)      5.5 / 5 ½ weeks

**1**

(ii)     rose gains **1** mark

         rose, then fell then rose again gains **2** marks

         a further **1** mark for **one** quantitative statement eg

•        rose for 3 weeks / to 14–15 units

•        dropped to 4 weeks / 9 units

•        rose to 7 weeks / 64–65 units

**3**

(iii)     (no)

         level begins to fall / is falling (after 7 weeks)

**1**

**[7]**

**M3.**(a)     (i)      any **one** from:

•        (produce) toxins / poisons

•        (cause) damage to cells

*kill / destroy cells*

*allow kills white blood cells*

**1**

(ii)     produce antitoxins

**1**

engulf / ingest / digest pathogens / viruses / bacteria / microorganisms

*accept phagocytosis or description*

*ignore eat / consume / absorb for engulf*

*ignore references to memory cells*

**1**

(b)    (i)      dead / inactive / weakened

*accept idea of antigen / protein*

**1**

(measles) pathogen / virus

*ignore bacteria*

**1**

(ii)     (after infection)

*accept converse if clearly referring to before vaccination*

**1**

rise begins sooner / less lag time

steeper / faster rise (in number)

**1**

longer lasting **or** doesn’t drop so quickly

*idea of staying high for longer*

*ignore reference to higher starting point*

**1**

(iii)    antibodies are specific or needs different antibodies

*accept antigens are different* ***or*** *white blood cells do not recognise virus*

**1**

(c)     reduces spread of infection / less likely to get an epidemic

*accept idea of eradicating measles*

**1**

**[10]**

**M4.**          (a)     (i)      dead / inactive / weakened

*allow antigen / protein*

*ignore ref to other components*

*ignore small amount*

**1**

pathogen / bacterium / virus / microorganism

*ignore germs / disease*

**1**

(ii)     *antigen / antibiotic instead of antibody = max 2*

white blood cells produce / release antibodies

*accept lymphocytes / leucocytes / memory cells produce antibodies  
do* ***not*** *accept phagocytes*

**1**

antibodies produced quickly

**1**

(these) antibodies destroy the pathogen

*allow kill  
do* ***not*** *accept antibodies engulf pathogens*

**1**

(b)     (i)     (live) bacteria still in body

*ignore numbers*

**1**

would reproduce

*ignore mutation / growth*

**1**

(ii)     antibiotics / treatment ineffective **or** resistant pathogens survive

*accept resistant out compete non-resistant*

**1**

these reproduce

**1**

population of resistant pathogens increases

*allow (resistant pathogens reproduce) rapidly*

**1**

**[10]**

**M5.**(a)     any **one** from:

•        not all deaths recorded

•        not all causes of deaths recorded

*allow cause may not be known*

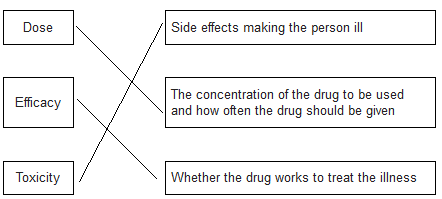
**1**

(b)     antibiotics do not kill viruses

*allow antibiotics only kill bacteria*

**1**

(c)



*all correct for* ***2*** *marks*

*1 or 2 correct for* ***1*** *mark*

**2**

(d)     any **one** from:

•        to prevent false claims

•        to make sure the conclusions are correct / valid

•        to avoid bias

**1**

(e)     some people would be immune to EVD

*allow those vaccinated would not contract the disease*

**1**

if less people (in a population) have EVD less chance of it being passed on

**1**

(f)     **Level 3 (5–6 marks):**

A detailed and coherent evaluation is provided which considers a range of arguments for and against the use of unlicensed drugs and comes to a conclusion consistent with the reasoning.

**Level 2 (3–4 marks):**

An attempt to give arguments for and against the use of unlicensed drugs is made. The logic may be inconsistent at times but builds towards a coherent argument.

**Level 1 (1–2 marks):**

Discrete relevant points made. The logic may be unclear and the conclusion, if present,  
may not be consistent with the reasoning.

**0 marks:**

No relevant content

**Indicative content**

**pros**

•        might save some lives

•        vaccine could reduce chance of future outbreaks

•        patient made aware of risk and agreed to use of drug

•        sharing of results could speed up development of effective vaccines / drugs

•        used mainly for health workers who were risking their lives to help

**cons**

•        could be dangerous

**or**

vaccine could harm a healthy person

•        goes against legislation / laws governing drug development

•        might set a precedent for other drugs not to be fully tested

•        unfair as not available to the African people

a justified conclusion

**6**

**[13]**

**M6.**          (a)     don’t kill pathogens / bacteria / viruses / microbes / microorganisms

*allow don’t contain antibiotics*

*ignore antibodies / attack / fight*

*allow only treat symptoms / pain*

*ignore kill disease / germs*

**1**

(b)     any **two** from:

•        age

•        gender

•        extent / severity of pain  
**or** how long had pain before trial

•        type of pain / illness / site of pain

*accept ‘the pain’ for* ***1*** *mark, if neither extent or type given*

*ignore pain threshold*

•        (body) mass / weight / height

*allow body size / physique*

•        other medical issues / drugs taken / health / fitness

•        ethnicity

**2**

(c)     (i)        75

*ignore calculations / %*

**1**

(ii)     faster pain relief / decrease

*allow pain relief sooner****or*** *it works quicker*

***or*** *more pain relief at start / in first 1 / 1 hours*

**1**

(iii)    decrease of pain higher / more

*ignore more effective unless qualified by time > 1 hoursallow effect lasts longer*

**1**

decrease of pain is longer lasting

**1**

(d)     any **three** from:

*ignore yes or no*

**(Yes because)**

•        rapid pain relief (from A)

•        long lasting pain relief (from B)

•        and it costs less

•        the sum of the pain relief (from A + B) is greater (than X)

**(No because)**

•        drug X gives more pain relief

•        (A + B / they ) might interact with each other

•        could result in overdose

•        could be more / new side effects

*if neither points gained  
allow (more) dangerous*

**3**

**[10]**

**M7.**         (a)      (i)     any **one** from:

•         cells

•         tissues

•         (live) animals / named

*allow mammals*

**1**

(ii)     any **three** from:

(to test for)

•         toxicity / check not poisonous / not harmful

*allow side-effect  
allow converse*

•         interaction with other drugs

•         efficacy **or** to see if they work **or** check if they treat the disease

*allow converse*

•         dosage **or** how much is needed

**3**

(b)     **argued evaluation**

*comparison can be written anywhere in evaluation allow use of ‘only’ for implied comparison for each point eg* ***only*** *statins damage muscles / kidneys / organs*

any **six** from:

•        statin can damage / muscles / kidneys / organs but cholesterol blockers don’t

*ignore liver*

*if neither of the first 2 points are given accept for* ***1*** *mark*

•        statins can cause death but cholesterol blockers don’t

*statins are more dangerous than cholesterol blockers* ***or*** *statins have more side effects*

•        cholesterol blockers can interfere with action of other drugs but statins don’t

•        statins are for a life time but cholesterol blockers are not

•        statins (might) reduce cholesterol to zero but cholesterol blockers only reduce it **or** statins reduce cholesterol more

*allow statins (might) stop membrane / hormone production but cholesterol blockers don’t*

•        statins better for people with inherited high cholesterol

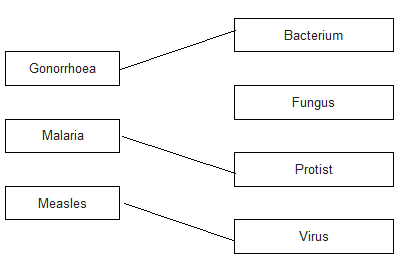
•        cholesterol blockers better for people with dietary cholesterol problems

•        taking/using statins/cholesterol blockers is better than dying from heart attack or build up of fat in blood vessels or reduced blood flow

**6**

**[10]**

**M8.**(a)



**3**

(b)     (trachea) has mucus

**1**

to trap pathogens

**1**

(trachea) has cilia

**1**

to move mucus out of trachea

**1**

(c)     **dependent variable:**

number of times mosquitoes landed on socks

**1**

**control variable:**

any **one** from:

•        number of mosquitoes in each container

•        length of time socks worn

•        dampness of socks

•        same type of socks

•        size of container

•        time

•        temperature

•        species of mosquito

•        age of mosquito

**1**

(d)     use worn socks

**or**

use chemical from worn socks

**1**

to attract / trap infected mosquitoes

**1**

*or accept:*

*wear clean socks / change socks regularly (1)*

*to reduce the chance of attracting mosquitoes (1)*

(e)     less chlorophyll present

**1**

(so) less light absorbed

**1**

(so) reduced photosynthesis

**or**

(so) less sugar / food made

**1**

**[14]**