

Question	Answers	Extra information	Mark	AO / Specification reference
01.1	1964		1	AO2 MS4a 4.3.1.7
01.2	380 000		1	AO2 MS4a 4.3.1.7
01.3	virus		1	AO1 4.3.1.2 4.3.1.7
01.4	1968		1	AO3 4.3.1.7
02.1	group of cells working together		1	AO2 4.2.1
02.2	to produce mucus/secretions/sticky fluid		1	AO3 4.3.1.6
02.3	cilium any two from: <ul style="list-style-type: none"> • waft/move mucus • which contains trapped pathogens/microorganisms/dust particles • away from the lungs / towards the throat 		1 2	AO2 4.3.1.6

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02.4	any two from: <ul style="list-style-type: none"> • platelets in blood • cause a mesh of fibres/protein strands to form over the wound • red blood cells get trapped (in mesh) • clot dries to form a scab 	credit references to fibrinogen being converted into fibrin	2	AO1 4.3.1.6
03.1	small dose on healthy volunteers – to check for side effects cells – to find if the drug is toxic large numbers of patients – to determine the optimum dose small number of patients – to prove the drug is effective	1 mark for one correct 2 marks for two correct 3 marks for all correct	3	AO1 4.3.1.9
03.2	risk of bias		1	AO3 4.3.1.9
03.3	two sets of volunteers one group given placebo, other given drug neither patient nor doctor knows which patients are given which treatment	accept multiple sets of volunteers accept groups are given different drugs	1 1 1	AO1 4.3.1.9

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03.4	any one from: <ul style="list-style-type: none"> • all patients have access to a course of treatment / so the patient is not denied an existing treatment • unethical to deny a patient an existing treatment which would benefit others but not the patient • to be able to compare the effectiveness of the new treatment over the existing treatment 		1	AO3 4.3.1.9
04.1	pathogen antibodies destroy immune		4	AO1 4.3.1.7
04.2	They are dead or weakened forms of the pathogen		1	AO1 4.3.1.7
04.3	any one from: <ul style="list-style-type: none"> • temperature • muscle pain • swelling • headaches 	accept other reasonable side effect	1	AO1 4.3.1.7
05.1	Alexander Fleming		1	AO1 4.3.1.8
05.2	mould		1	AO1 4.3.1.8

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05.3	measles is a viral infection antibiotics only kill bacteria / cannot destroy viruses		1 1	AO1 4.3.1.8
05.4	antibiotics kill specific strains/species of bacteria more than one type of antibiotic is needed to be able to treat all bacterial infections	accept references to drug resistance accept other alternatives such as penicillin allergy	1 1	AO2 4.3.1.8
06.1	mucus production in trachea		1	AO1 4.3.1.6
06.2	cut skin – forms a scab to prevent pathogen nose – internal hairs act as a barrier to pathogen entry stomach – contains acid to kill pathogens		1 1 1	AO1 4.3.1.6
06.3	immune system		1	AO1 4.3.1.6
07.1	antibiotic		1	AO1 4.3.1.8
07.2	(6) → 1 → 5 → 7 → 2 → 4 → (3)	4 marks for full correct sequence 3 marks for three or four correct sentence positions 2 marks for two correct sentence positions 1 mark for one correct sentence position	4	AO1 4.3.1.9

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07.3	any one from: <ul style="list-style-type: none"> • mould • plants • micro-organisms 		1	AO3 4.3.1.9
07.4	a placebo is used neither the patient nor doctor know who receives the placebo and who receives the trial drug		1 1	AO1 4.3.1.9
08.1	it is a virus		1	AO1 4.3.1.8
08.2	willow tree		1	AO1 4.3.1.8
08.3	aspirin will treat symptoms of measles so the child will feel better while the aspirin is acting		1 1	AO1 4.3.1.8

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08.4	any four from: <ul style="list-style-type: none"> • dead/inactive/weakened pathogen introduced to the body • recognised as being foreign by white blood cells / triggers an immune response • white blood cells respond produce antibodies • antibodies are specific to pathogen • antibodies produced quickly (on reinfection) / rapid response • antibodies produced in larger quantities • killing the pathogen 		4	AO1 4.3.1.8
08.5	the level of infection will increase in the population as more children will be infected/carry/transfer the disease		1 1	AO1 4.3.1.8
09.1	aspirin or paracetamol		1	AO1 4.3.1.8
09.2	penicillin or amoxicillin		1	AO1 4.3.1.8
09.3	digitalis		1	AO1 4.3.1.8 4.3.1.9

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09.4	symptoms better pathogens cure		1 1 1 1	AO1 4.3.1.8
10.1	dead/weakened (tetanus) bacteria	accept tetanus/bacterial antigens	1	AO2 4.3.1.7
10.2	fewer people will get the disease because they are immune fewer people are carriers of the disease so fewer people will be exposed to the disease	accept correct reference to herd immunity	1 1	AO1 4.3.1.7
10.3	any three from: <ul style="list-style-type: none"> • vaccination triggers an immune response (to a specific pathogen) • each pathogen has a specific antigen • white blood cells produce antibodies specific to a particular antigen • this provides immunity only against that particular pathogen/antigen 		3	AO2 4.3.1.7