1 Bacteria, fungi and protoctists can cause disease and have features common to all living organisms.

Viruses can cause disease but are not classified as living.

(a) (i) Explain why viruses are not classified as living.

(2)

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(ii) Name a disease caused by a virus.

(1)

.....

(b) A new group of pathogens called prions was discovered in the 1980s.

Prions are simple proteins.

All known prion diseases can be fatal because the immune system does not recognise prions as foreign.

Suggest two ways in which prions differ from viruses.

(2)

1 .....

.....

2 .....

.....

(Total for Question = 5 marks)

2 The table gives features of three different groups of organism.

Complete the table by putting a tick (✓) in the box if the organisms in the group have the feature and a cross (×) in the box if the organisms in the group do not have the feature. The first one has been done for you.

(4)

Feature of organism	Group of organism		
	Bacteria	**Fungus**	**Virus**
have a protein coat	×	×	✓
all are pathogens			
cell walls made of chitin			
contain DNA in a nucleus			
respire			

(Total for Question = 4 marks)

3 The following organisms can be classified into major groups.

Amoeba	*Lactobacillus*	bean	*Mucor*	mosquito

(a) From the list above give the name of

(4)

(i) a bacterium .....

(ii) a fungus .....

(iii) a flowering plant .....

(iv) an animal .....

(b) Viruses are not included in most classification systems.

(i) Give **three** ways in which viruses differ from other living organisms.

(3)

1 .....

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2 .....

.....

3 .....

.....

(ii) Give **one** example of a disease caused by a virus, name the organism it infects and describe its effect on the organism.

(3)

Disease .....

Organism infected .....

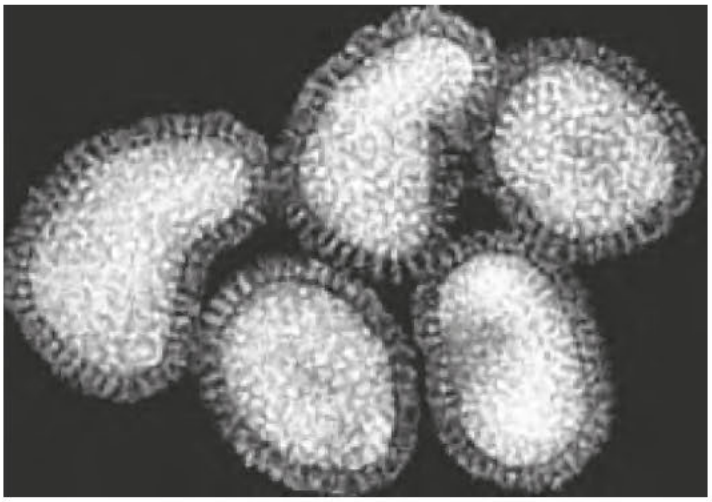
Effect .....

.....

.....

(Total for Question = 10 marks)

4 The photograph shows some viruses.



(a) Suggest two reasons why most biologists do not classify viruses as living organisms.

(2)

1 .....

.....

2 .....

.....

(b) Name one example of a virus.

(1)

.....

(c) Give one structural difference between a bacterium and a virus.

(1)

.....

.....

(Total for Question = 4 marks)

5 (a) Antibiotics are chemicals used to kill pathogens that cause infections.

(i) Name the type of organism that make antibiotics.

(1)

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(ii) Name the type of pathogen that is killed by antibiotics.

(1)

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(b) Some antibiotics are no longer effective in killing pathogens. Use your knowledge of natural selection to explain why.

(5)

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(Total for Question = 7 marks)

6 The use of a pesticide may result in an increase in the number of pest organisms that are resistant to the pesticide.

Use your knowledge of natural selection to explain the increase in the number of pest organisms that are resistant to the pesticide.

(5)

(Total for Question = 5 marks)

7 (a) The table shows four different groups of organisms.

Complete the table to give an example for each group.

(4)

Group	Example
animals	
fungi	
bacteria	
protoctists	

(b) Different groups have different features.

Complete the table below to show if the feature is present in all, some or none of each group.

Some of the table has been completed for you.

(3)

Group	Are multicellular	Cells have nucleus	Cells contain chloroplasts	Cells have cell walls
fungi		all		all
bacteria			some	all
protoctists	none		some	

(c) (i) Give one way in which the structure of a virus differs from a bacterium.

(1)

.....

.....

.....

(ii) Bacteria and viruses can act as pathogens. Give an example of a disease caused by a virus.

(1)

.....

(Total for Question = 9 marks)

8 (a) Although plants and animals have many different features, they also have some features in common.

The table lists some features.

In each box, place a tick (✓) if the feature is present or a cross (×) if the feature is absent. One has been done for you.

(4)

Feature	Plants	Animals
can move from place to place	×	✓
can carry out photosynthesis		
are multicellular		
have cells with cell walls		
store carbohydrate as glycogen		

(b) Organisms that cause disease are known as pathogens.

Give **two** groups of organisms that include pathogens.

(2)

1 .....

2 .....

(Total for Question = 6 marks)

9 Doctors sometimes give antibiotics to very ill patients.

The passage below describes the treatment.

Complete the sentences in the passage by writing a suitable word or words on each dotted line.

Antibiotic solution is given to the patient through a tube. The tube is connected to a vein in the arm of the patient, using a needle. It is connected to a vein rather than an artery because veins have a lower ..... than arteries. The antibiotic travels to the heart in the largest vein in the body called the ..... .

It enters a chamber called the right atrium, and passes to the right ..... before being pumped to the lungs in the ..... artery.

The antibiotic returns to the heart and eventually leaves the heart in the aorta, the largest ..... in the body. The antibiotic is then carried to the tissues where it leaves the smallest blood vessels called ..... .

The antibiotic then kills pathogens called ..... that were responsible for the patient being very ill.

(Total for Question = 7 marks)

10 (a) A student is given two samples of carbohydrates.

He tests to see if one is glucose and the other one is starch.

Describe the two chemical tests he should use to identify each carbohydrate.

(4)

(b) Different groups of organism store carbohydrate as different molecules.

Complete the table to show an example from each group of organisms and the molecule they use to store carbohydrate.

(4)

Group	Example from the group	Molecule used to store carbohydrate
animals	cat	
plants	maize	
fungi		

(Total for Question = 8 marks)