

Question number	Answer	Notes	Marks
1 (a) (i)	1. cannot reproduce without host; 2. do not move; 3. do not respire; 4. not respond to stimuli; 5. not grow / develop; 6. not excrete; 7. not feed; 8. do not control internal conditions;		2
(ii)	1. HI / AIDS; 2. TMV / tobacco mosaic disease; 3. influenza / flu / cold / Ebola / etc;	allow any named virus or disease caused by virus	1

(b)	1. n genetic material / DNA / RNA; 2. not cognised by immune system / eq; 3. small r; 4. always fatal; 5. viruses have protein coat; 6. viruses can be used as vectors;	allow converse	2
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Total 5 marks

Question number	Answer	Notes	Marks																											
2	<table border="1"> <thead> <tr> <th rowspan="2">Feature of organism</th> <th colspan="3">Type of organism</th> </tr> <tr> <th>Bacteria</th> <th>Fungus</th> <th>Virus</th> </tr> </thead> <tbody> <tr> <td>have a protein coat</td> <td>(x)</td> <td>x)</td> <td>✓)</td> </tr> <tr> <td>all are pathogens</td> <td>x</td> <td>x</td> <td>✓;</td> </tr> <tr> <td>cell walls made of chitin</td> <td>x</td> <td>✓</td> <td>x;</td> </tr> <tr> <td>contain DNA in a nucleus</td> <td>x</td> <td>✓</td> <td>x;</td> </tr> <tr> <td>respire</td> <td>✓</td> <td>✓</td> <td>x;</td> </tr> </tbody> </table>	Feature of organism	Type of organism			Bacteria	Fungus	Virus	have a protein coat	(x)	x)	✓)	all are pathogens	x	x	✓;	cell walls made of chitin	x	✓	x;	contain DNA in a nucleus	x	✓	x;	respire	✓	✓	x;	Tick cross hybrid = 0	4
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			Total 4 Marks																											

Question number	Answer	Notes	Marks
3 (a) (i)	Lactobacillus;	Allow approx. spelling	1
(ii)	Mucor;		1
(iii)	bean;		1
(iv)	mosquito;		1
(b) (i)	<p>only reproduce in living cells / eq;</p> <p>protein coat;</p> <p><u>only</u> DNA / <u>only</u> RNA / one type of nucleic acid / eq;</p> <p>smaller;</p> <p>no organelles;</p> <p>no cytoplasm;</p> <p>no mitochondria;</p> <p>do not move;</p> <p>do not respire;</p> <p>do not feed;</p> <p>no sensitivity;</p> <p>do not grow;</p> <p>do not excrete / produce waste;</p>	ignore cell wall / cell membrane / chloroplast / nucleus / nucleiod / multicellular	max 3
(ii)	HIV / eq; human / eq; AIDS / effects immune system / eq;	if named disease wrong still allow effect ignore organs	3

TOTAL 10 MARKS

Question number	Answer	Notes	Marks
4 (a)	1. do not respire; 2. cannot reproduce without (host) cell / reproduce in (host) cell / can only reproduce within an organism; 3. do not move; 4. do not sense; 5. do not <u>excrete</u> ; 6. do not grow; 7. do not feed / do not need nutrition; 8. do not control their internal conditions; 9. are not cellular;		2 max
(b)	HIV / TMV / influenza / Ebola / herpes / swine flu / bird flu / H15;	Allow named virus disease Ignore AIDS	1

	<ol style="list-style-type: none"> 1. bacteria are bigger / viruses are smaller; 2. cell membrane in bacterium; 3. cell wall in bacteria / protein coat/capsid in virus / envelope in virus; 4. flagellum in bacteria / eq; 5. bacteria have plasmids / nucleoid; 6. bacteria have cytoplasm; 	<p>Ignore cellular structure alone</p> <p>Ignore nucleus / shape</p>	1 max

Total 4 marks

Question number	Answer	Notes	Marks
5 (a) (i)	fungi / bacteria / <i>Penicillium</i> ;	allow named correct organism	1
(ii)	bacteria;		1
(b)	1. <u>mutation</u> ; 2. <u>variation</u> ; 3. gene / allele / DNA; 4. survive / not killed / eq; 5. <u>resistant</u> ; 6. reproduce / multiply / replicate / breed / produce offspring / eq; 7. pass on <u>gene / allele / DNA</u> ;	allow resist pass on resistance = 1 for resistance MP 5 only pass on gene = 2 = Mp3 and Mp7	5

(Total = 7 marks)

Question number	Answer	Notes	Marks
6	1 <u>variation / variety</u> ; 2 rare / random; 3 mutation / mutant; 4 gene / allele / DNA / eq; 5 survive / not killed / live / eq; 6 reproduce / breed / have offspring / eq; 7 pass on (gene) / eq; 8 many generations / repeated over time / eq;	allow converse for non-resistant ignore pass on phenotype / characteristic	Max 5
		Total	5

Question number	Answer					Notes	Marks																				
7 (a)	<table border="1"> <thead> <tr> <th>Group</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>animals</td> <td>human / eq;</td> </tr> <tr> <td>fungi</td> <td><i>Mucor</i> / eq;</td> </tr> <tr> <td>bacteria</td> <td><i>Lactobacillus</i> / <i>Pneumococcus</i> / <i>Salmonella</i> / eq;</td> </tr> <tr> <td>protocists</td> <td><i>Amoeba</i> / <i>Chlorella</i> / <i>Plasmodium</i> / seaweed / algae / eq;</td> </tr> </tbody> </table>					Group	Example	animals	human / eq;	fungi	<i>Mucor</i> / eq;	bacteria	<i>Lactobacillus</i> / <i>Pneumococcus</i> / <i>Salmonella</i> / eq;	protocists	<i>Amoeba</i> / <i>Chlorella</i> / <i>Plasmodium</i> / seaweed / algae / eq;	allow mammals / birds / eq allow mushroom / yeast / mould toadstool / ignore named disease / athlete's foot ignore malaria	4										
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protocists	(none	all	(some)	some;																							

Question number	Answer	Notes	Marks
7 (c) (i)	smaller; protein coat / no cell wall / eq; no cell membrane; no cytoplasm / no organelles / no plasmids / no ribosome / eq; no <u>flagellum</u> ;	ignore reference to shape and reproduction ignore	1
(ii)	tobacco mosaic / AIDS / <u>influenza</u> / any correct flu / cold / measles / eq;	nucleus / Golgi / mitochondria / eq allow converse ignore HIV	1
		Total	9

Question number	Answer			Notes	Marks
8 (a)	Feature		Animals	4 marks all correct 3 marks for 6 or 7 2 marks for 4 or 5 1 marks for 2 or 3 0 marks for 0 or 1 blank squares = wrong tick cross combined = wrong	4
can move from place to place	(X)	(√)			
can carry out photosynthesis	√	X;			
are multicellular	√	√;			
have cells with cell walls	√	X;			
store carbohydrate as glycogen	X	√;			
(b)	fungi; bacteria / prokaryotes; protocists / protozoa; viruses;			allow singular or plural ignore parasites / microorganisms / specific names eg cholera / amoeba	Max 2

Total 6 marks

Question number	Answer	Marks
9 (a)	pressur vena cava; ventricle; pulmonary; artery; capillaries; bacteria;	7

Total 7 Marks

Question number	Answer	Notes	Marks												
10(a)	1. iodine; 2. bl / black / blue black = starch; 3. Benedict' / eq; 4. heat / se water bath / eq; 5. r / orange / yellow / green = glucose;	if iodine for glucose goes blue black = 0 only award Mp1 and Mp3 if linked to correct test heat must be linked to Benedict's	4 max												
(b)	<table border="1"> <thead> <tr> <th>Group</th> <th>Example from the group</th> <th>Molecule used to store carbohydrate</th> </tr> </thead> <tbody> <tr> <td>animals</td> <td></td> <td>glycogen;</td> </tr> <tr> <td>plants</td> <td>(maize)</td> <td>starch / sucrose;</td> </tr> <tr> <td>fungi</td> <td>mucor / yeast / mushroom / mould / eq;</td> <td>glycogen;</td> </tr> </tbody> </table>	Group	Example from the group	Molecule used to store carbohydrate	animals		glycogen;	plants	(maize)	starch / sucrose;	fungi	mucor / yeast / mushroom / mould / eq;	glycogen;	Ignore in plants sugar / glucose / fructose Allow <i>Fomes formentarius</i> / eq	4
Group	Example from the group	Molecule used to store carbohydrate													
animals		glycogen;													
plants	(maize)	starch / sucrose;													
fungi	mucor / yeast / mushroom / mould / eq;	glycogen;													

Total 8 marks