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

(b)	1. no genetic material / DNA / RNA; 2. not recognised by immune system / eq; 3. smaller; 4. always fatal; 5. viruses have protein coat; 6. viruses can be used as vectors;	allow converse	2

Total 5 marks

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>2</td><td>
<table>
<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>
<tr><td>have a protein coat</td><td>(×)</td><td>×)</td><td>✓)</td></tr>
<tr><td>all are pathogens</td><td>×</td><td>×</td><td>✓;</td></tr>
<tr><td>cell walls made of chitin</td><td>×</td><td>✓</td><td>×;</td></tr>
<tr><td>contain DNA in a nucleus</td><td>×</td><td>✓</td><td>×;</td></tr>
<tr><td>respire</td><td>✓</td><td>✓</td><td>×;</td></tr>
</table>
</td><td>Tick cross hybrid = 0</td><td>4</td></tr>
<tr><td></td><td></td><td></td><td>Total 4 Marks</td></tr>
</table>

Question number	Answer	Notes	Marks
3 (a) (i)	Lactobacillus;	Allow approx. spelling	1
(ii)	Mucor;		1
(iii)	bean;		1
(iv)	mosquito;		1
(b) (i)	only reproduce in living cells / eq; protein coat; only DNA / only RNA / one type of nucleic acid / eq; smaller; no organelles; no cytoplasm; no mitochondria; do not move; do not respire; do not feed; no sensitivity; do not grow; do not excrete / produce waste;	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 excrete; 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

	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;	Ignore cellular structure alone Ignore nucleus / shape	1 max

Total 4 marks

Question number	Answer	Notes	Marks
5 (a) (i)	fungi / bacteria / *Penicillium*;	allow named correct organism	1
(ii)	bacteria;		1
(b)	1. mutation; 2. variation; 3. gene / allele / DNA; 4. survive / not killed / eq; 5. resistant; 6. reproduce / multiply / replicate / breed / produce offspring / eq; 7. pass on gene / allele / DNA;	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

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>7 (a)</td><td>
<table>
<tr><th>Group</th><th>Example</th></tr>
<tr><td>animals</td><td>human / eq;</td></tr>
<tr><td>fungi</td><td>Mucor / eq;</td></tr>
<tr><td>bacteria</td><td>Lactobacillus / Pneumococcus / Salmonella / eq;</td></tr>
<tr><td>protoctists</td><td>Amoeba / Chlorella / Plasmodium / seaweed / algae / eq;</td></tr>
</table>
</td><td>allow mammals / birds / eq
allow mushroom / yeast / mould
toadstool / ignore named disease / athlete’s foot
ignore malaria</td><td>4</td></tr>
<tr><td>(b)</td><td>
<table>
<tr><th>Group</th><th>Are multicellular</th><th>Cells have nucleus</th><th>Cells contain chloroplasts</th><th>Cells have cell walls</th></tr>
<tr><td>fungi</td><td></td><td>(all)</td><td>none</td><td>(all);</td></tr>
<tr><td>bacteria</td><td></td><td>none</td><td>(some)</td><td>(all);</td></tr>
<tr><td>protoctists</td><td>(none</td><td>all</td><td>(some)</td><td>some;</td></tr>
</table>
</td><td></td><td>3</td></tr>
</table>

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 nucleus / Golgi / mitochondria / eq	1
(ii)	tobacco mosaic / AIDS / in<u>flu</u>enza / any correct flu / cold / measles / eq;	allow converse ignore HIV	1
		Total	9

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>8 (a)</td><td>
<table>
<tr><th>Feature</th><th></th><th>Animals</th></tr>
<tr><td>can move from place to place</td><td>(X)</td><td>(√)</td></tr>
<tr><td>can carry out photosynthesis</td><td>√</td><td>X;</td></tr>
<tr><td>are multicellular</td><td>√</td><td>√;</td></tr>
<tr><td>have cells with cell walls</td><td>√</td><td>X;</td></tr>
<tr><td>store carbohydrate as glycogen</td><td>X</td><td>√;</td></tr>
</table>
</td><td>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</td><td>4</td></tr>
<tr><td>(b)</td><td>fungi;
bacteria / prokaryotes;
protoctists / protozoa;
viruses;</td><td>allow singular or plural
ignore parasites / microorganisms / specific names eg cholera / amoeba</td><td>Max 2</td></tr>
</table>

Total 6 marks

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

Total 7 Marks

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>10(a)</td><td>1. iodine;
2. blue / black / blue black = starch;
3. Benedict's / eq;
4. heat / use water bath / eq;
5. red / orange / yellow / green = glucose;</td><td>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</td><td>4 max</td></tr>
<tr><td>(b)</td><td><table>
<tr><th>Group</th><th>Example from the group</th><th>Molecule used to store carbohydrate</th></tr>
<tr><td>animals</td><td>(cat)</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>
</table></td><td>Ignore in plants sugar / glucose / fructose
Allow
Fomes formentarius / eq</td><td>4</td></tr>
</table>

Total 8 marks