

UNIT B2
FOUNDATION TIER

Question	Marking details	Marks Available								
1. (a) (i)	3(μm)	1								
	(ii) Algal (cell.)	1								
(b)	<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Feature</th> <th style="text-align: left;">Micro-organism</th> </tr> </thead> <tbody> <tr> <td>Reproduces by budding</td> <td>Yeast</td> </tr> <tr> <td>Reproduces by dividing in two</td> <td>Bacteria/ Algal cell</td> </tr> <tr> <td>Reproduces inside a host cell</td> <td>virus</td> </tr> </tbody> </table>	Feature	Micro-organism	Reproduces by budding	Yeast	Reproduces by dividing in two	Bacteria/ Algal cell	Reproduces inside a host cell	virus	3
Feature	Micro-organism									
Reproduces by budding	Yeast									
Reproduces by dividing in two	Bacteria/ Algal cell									
Reproduces inside a host cell	virus									
(c)	Protein.	1								
Question total		[6]								

Question	Marking details	Marks Available
2. (a)	Unambiguous line pointing at / in nucleus in cell A (must not touch chromosome)	1
(b)	4/ 2 pairs	1
(c)	Both cells must have: 2 long, 2 short lines drawn inside the nucleus.	1
	Question total	[3]

Question	Marking details	Marks Available
3. (a) (i)	(Soil) warmer under the sheets/ protects from frost damage; so enzymes work faster/ better.	2
(ii)	I Increases <u>and</u> plateaus/ flattens	1
	II From graph - should be 208	1
	III From graph - should be 100	1
	IV From graph - should be 28	1
(b) (i)	Red (plastic)	1
(ii)	Blue (plastic)	1
(iii)	Comparison idea / control/ to see what it would be like in the open. Reject reference to fair test	1
(c)	To average / smooth out variation in results (due to variable weather/ soil conditions); So more reliable/ increased strength of evidence/ increased confidence in evidence. NOT accuracy/ comparison/ reproducibility/ fair test	2
(d)	Any reasonable suggestion such as: Unsightly / litter / not recycled/ / not biodegradable/ wasteful of resources / harmful if eaten by animals / could trap animals/ is poisonous NOT pollution/ kill or harm unqualified	1
Question total		[12]

Question	Marking details	Marks Available								
4. (a)	Carbon dioxide/ CO ₂ Oxygen/ O ₂	2								
(b)	Absorb/ take in/ capture (sun)light. NOT catch/ trap/ uses	1								
(c) (i)	Kill leaf / stop reactions/ breaks down cells or cell walls. NOT denature/ kill enzyme	1								
(ii)	Decolourise leaf / dissolves or removes chlorophyll/ take the green out.	1								
(iii)	Soften leaf / make leaf permeable.	1								
(iv)	<table border="1"> <thead> <tr> <th><i>Colour of leaf</i></th> <th><i>Tick (✓) correct box</i></th> </tr> </thead> <tbody> <tr> <td><i>dark blue-black</i></td> <td style="text-align: center;">✓</td> </tr> <tr> <td><i>dark brown</i></td> <td></td> </tr> <tr> <td><i>Pale yellow</i></td> <td></td> </tr> </tbody> </table>	<i>Colour of leaf</i>	<i>Tick (✓) correct box</i>	<i>dark blue-black</i>	✓	<i>dark brown</i>		<i>Pale yellow</i>		1
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Question total		[7]								

Question	Marking details	Marks Available
5.	(a) (i) A Rib Accept rib cage B Trachea/ windpipe C Bronchus/ bronchi	3
	(ii) Diaphragm/ intercostal <u>muscle</u> ; (allow even if label arrow incorrect) Feature identified (mark independently of label)	2
	(b) (i) Diffusion.	1
	(ii) Any two from: Large surface area; thin; Moist / damp; NOT wet/ water Close to / rich or good blood supply. Accept no gap between alveolus and blood supply	3
Question total		[8]

FOUNDATION / HIGHER TIER

Question	Marking details	Marks Available
6/1 (a)	Respiration/ respire. NOT anaerobic respiration	1
(b) (i)	To kill or destroy bacteria / fungi / micro-organisms/ microbes/ to sterilise. NOT get rid of bacteria/ denature	1
(ii)	Weak disinfectant didn't kill <u>all</u> bacteria / fungi/ micro-organisms; Bacteria/ fungi/ micro-organisms grew/ reproduced/ multiplied; Respired producing heat	3
Question total		[5]

Question	Marking details	Marks Available
7/2 (a)	A Oesophagus/ gullet B Gall bladder	1 1
(b)	Indicative content: Food enters small intestine. Mixes with bile from gall bladder/ liver. Fat emulsified or description/ large globules to small globules (not molecules). Lipase from pancreas Lipase in small intestine. Breaks down/ digests/ hydrolyses fats. To fatty acids. And glycerol.	6

5-6 marks

The candidate constructs an articulate, integrated account correctly linking relevant points, such as those in the indicative content, which shows sequential reasoning. The answer fully addresses the question with no irrelevant inclusions or significant omissions. The candidate uses appropriate scientific terminology and accurate spelling, punctuation and grammar.

3-4 marks

The candidate constructs an account correctly linking some relevant points, such as those in the indicative content, showing some reasoning. The answer addresses the question with some omissions. The candidate uses mainly appropriate scientific terminology and some accurate spelling, punctuation and grammar.

1-2 marks

The candidate makes some relevant points, such as those in the indicative content, showing limited reasoning. The answer addresses the question with significant omissions. The candidate uses limited scientific terminology and inaccuracies in spelling, punctuation and grammar.

0 marks

The candidate does not make any attempt or give a relevant answer worthy of credit

Question total [8]

Question	Marking details	Marks Available
8/3	(a) (i) Breathing is <u>faster</u> so <u>more smoke</u> will be taken in (OWTTE); Lungs are smaller so easily/ quickly fill with smoke (OWTTE); Lungs are still developing/ growing therefore easily damaged. Accept Lungs are smaller and still developing = 1 Accept Therefore they fill quickly with smoke or easily damaged =1	3
	(ii) Any two from: Some parents think that smoking in cars has no effect on children; How smoking in cars (greatly) concentrates cigarette smoke (OWTTE); Levels of smoke in cars can be 27 times greater than in the home.	2
	(b) Any two from: (Particles or soot in smoke) it clog up the mucus (making harder to move); (Heat from smoke)/ it dries up mucus (and cleaning mechanism fails) or it stops the airways being moist; (Chemicals in smoke) it paralysing/ anaesthetises/ stops cilia/ hair like structures so they stop working.	2
Question total		[7]

Question	Marking details	Marks Available
9/4 (a)	When the predatory mite reaches 500/ 1 week after introduction/ at week 5/ between weeks 5 and 6 ; It kills off/ causes a decline in the red spider mite.	2
(b)	Biological control accept biocontrol	1
(c)	It may start eating other (harmless/ non pest species/) insects/ species/ non target species (not enough to say it may become a pest itself). NOT start eating the fruit	1
Question total		[4]
TOTAL FOUNDATION TIER		[60]