

Mark schemes

1

(a)

	Bacterial cell	Animal cell
Cell wall	✓	
Nucleus		✓
Cell membrane	✓	✓
Cytoplasm	✓	✓

1
1
1
1

(b) mitochondria

1

(c) any **one** from:

- chloroplast
ignore chlorophyll

- cell wall
- [permanent] vacuole

1

(d) chloroplast – to make food

or

for photosynthesis

or

to absorb light

OR

cell wall – strengthens cell (1)

*allow supports the cell **or** keeps cell turgid*

OR

[permanent] vacuole – holds cell sap (1)

1

[7]

2

(a) (i) A = (cell) membrane

1

B = cytoplasm

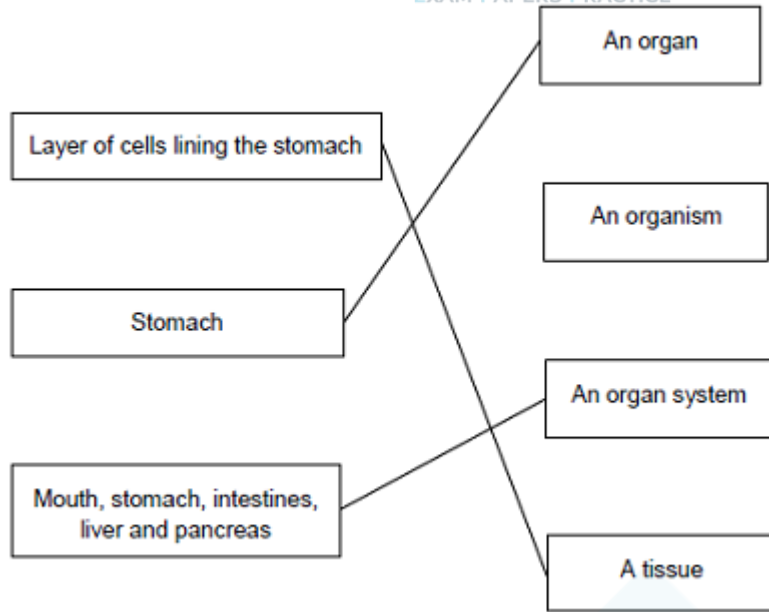
*do **not** accept cytoplasm*

1

(ii) To control the activities of the cell

1

(b)



extra lines cancel

3

[6]

3

(a) xylem **and** phloem

either order

allow words ringed in box

allow mis-spelling if unambiguous

1

(b) (i) movement / spreading out of particles / molecules / ions / atoms

ignore names of substances / 'gases'

1

from high to low concentration

accept down concentration gradient

ignore 'along' / 'across' gradient

ignore 'with' gradient

1

(ii) oxygen / water (vapour)

allow O₂ / O₂

ignore O² / O

allow H₂O / H₂O

ignore H²O

1

[4]

4

(a) (i) chloroplast

1

(ii) cell wall

1

- (b) (i) osmosis
accept diffusion 1
- (ii) cell wall (prevents bursting) 1
- (c) (i) carbon dioxide
allow correct formula 1
- glucose
allow sugar / starch 1
- (ii) any **two** from:
- light sensitive spot detects light
 - tells flagellum to move towards light
 - more light = more photosynthesis
- 2
- (d) (cell has) larger SA:volume ratio 1
- short (diffusion) distance
allow correct description 1
- (diffusion) via cell membrane is sufficient / good enough
- or**
- flow of water maintains concentration gradient 1
- [11]**
- 5
- (a) (i) villus 1
- (ii) its outer surface is one cell thick
cancel 1 mark for each extra box ticked 1
- it has a large surface area 1
- it has good blood supply 1
- (b) diffusion 1
- [5]**

6

- (a) (cell) wall
(cell) membrane
cytoplasm
vacuole

for 1 mark each

4

- (b) (i) A

- (ii) B

for 1 mark each

2

- (c) diffusion (reject osmosis)

for 1 mark

1

[7]

7

- (a) movement of water [1]

from high concentration (of water) to low concentration (of water)

or

from (an area of) dilute solution to an area of concentrated solution [1]

through a differentially **or** partially **or** selectively **or** semi permeable membrane [1]

3

- (b) (i) it will rise

1

- (ii) water enters visking tubing [1]

because the concentration of water outside is greater than the concentration inside

or

because the concentration of salt **or** solute is greater inside the tubing than outside [1]

or

to equalise concentration water has to enter visking tubing [2]

2

[6]

8

(a)

*correct names of cell components are required
it = cell in sugar solution*

any **two** from:

accept reverse only if clearly stated answer refers to cell in distilled water

- smaller vacuole
- smaller / less cytoplasm
allow protoplasm for cytoplasm
- cell membrane / cytoplasm not (fully) against cell wall
accept plasmolysed / flaccid / less turgid

or

cell membrane / cytoplasm (partly) pulled away from cell wall
*ignore reference to nucleus / water
ignore explanations*

or

space / liquid / sugar solution between cell
membrane / cytoplasm and cell wall

2

(b) water passed / moved out (of cell) by osmosis / diffusion

accept reverse answer if clearly refers to cell in distilled water

1

more concentrated (solution) outside

*assume reference to
concentration refers to solute
concentration unless answer refers to water concentration*

or

less concentrated (solution) inside

or

lower water concentration outside

*accept references to hypertonic / hypotonic solutions **or** water
potential*

or

higher water concentration inside

1

[4]

9

(a) oxygen / O_2

allow O_2

do not accept O^2

or

carbon dioxide / CO_2

allow CO_2

do not accept CO^2

1

(b) any **four** from:

ignore references to tail used for locomotion

ignore reference to nostrils

- because structure X / gills has threads / filaments **or** is thin **or** tadpole has longer tail
- there is an increased surface area
- there is a shorter diffusion pathway
- therefore an increase in exchange
ignore food
- eyes (now visible in older tadpole)
- so that food / danger etc can be seen
accept reference to a good blood supply
accept increased water flow over gills / tail will increase diffusion of gases

4

[5]