

MARK SCHEME

GCSE

BIOLOGY

AQA - COMBINED SCIENCE

B 1 - TEST 2

CELL BIOLOGY

Beginner

Mark schemes

1.

(a) nucleus

1

cell wall

1

(b) any **one** from:

- contain (many) chloroplasts
- positioned near the top surface of the leaf
- packed closely together

1

(c)

Structure	Tissue	Organ	Organ system
Leaf		✓	
Xylem	✓		
Roots, stem and leaves			✓

additional tick in a row negates the credit for that row

allow **1** mark for two correct rows

2

(d) x4

1

reason: any **one** from:

- gives the largest field of view
- easier to focus

1

(e) eyepiece lens: x10

and

objective lens: x40

or

eyepiece lens: x5

and

objective lens: x80

allow sensible suggestions that give a magnification of x400

1

(f) 12.4 (mm)

allow 12 (mm)

1

(e) real width = $\frac{12.4}{400}$

1

0.031 (mm)

an answer of 0.031 (mm) scores 2 marks

allow ecf from part (f)

1

[11]

2.

(a) cell membrane

extra boxes ticked negates mark

1

(b) nucleus

extra boxes ticked negates mark

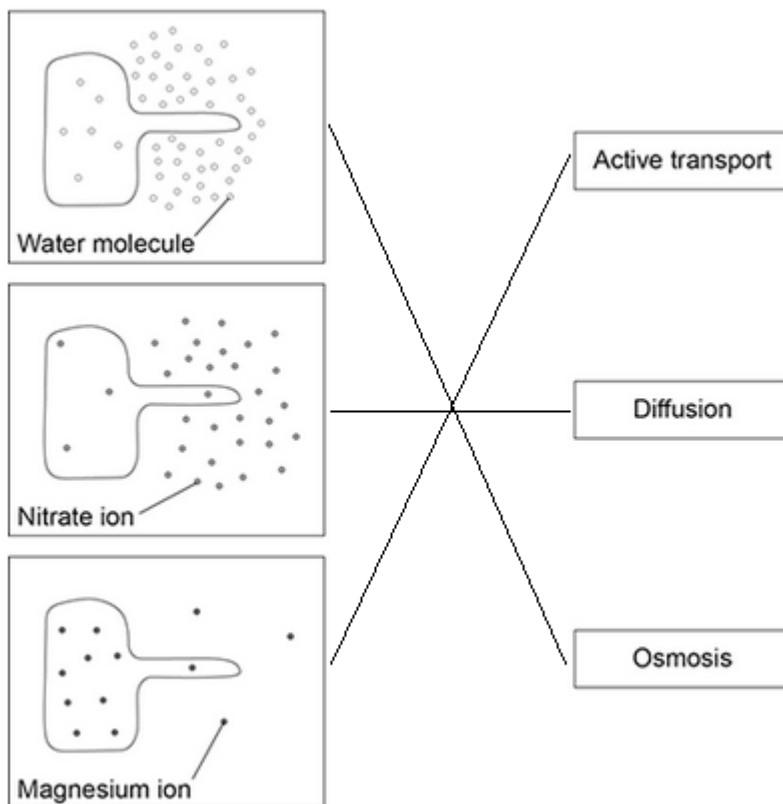
1

(c) has a tail so it can swim (to an egg)

accept has many mitochondria to release energy to swim

1

(d)



all three correct for 2 marks
one or two correct for 1 mark

2

[5]

3.

(a) A = nucleus
allow phonetic spelling

1

B = (cell) membrane

1

(b) for repair / growth **or** to replace cells
ignore new cells / skin

1

(c) (i) embryos

1

(ii) paralysis

1

[5]

4.

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

1

B = cytoplasm

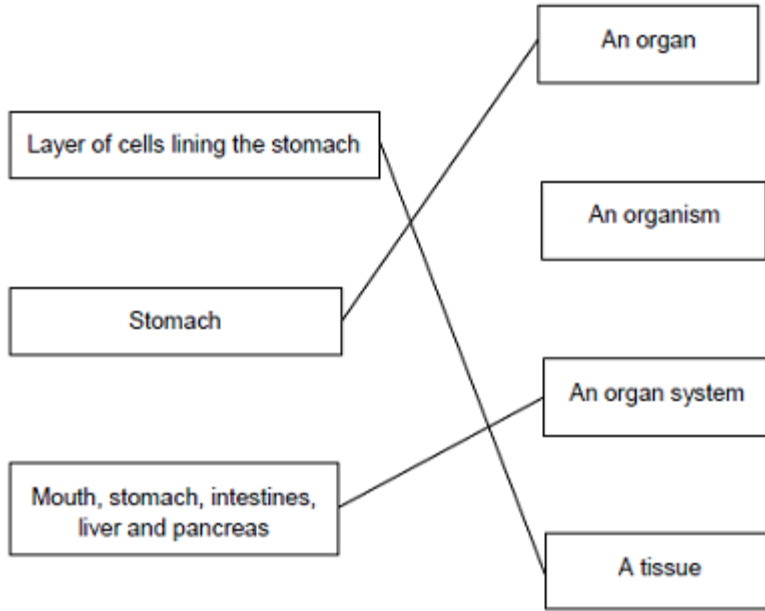
do not accept cytoplasm

1

(ii) To control the activities of the cell

1

(b)



extra lines cancel

3

[6]

5.

(a) (i)

Feature	Mitosis only	Meiosis only
Produces new cells during growth and repair	✓	
Produces gametes (sex cells)		✓
Produces genetically identical cells	✓	

All 3 correct = **2** marks

2 correct = **1** mark

0 or 1 correct = **0** marks

2

(ii) (a man) testis / testes
accept testicle(s)

1

(a woman) ovary / ovaries
do not accept 'ova' / ovule

1

(b) (i) XY / YX
or
X and Y

1

(ii) XX
or
X and X or 2 X's
accept X

1

(c) $\frac{1}{2}$ / 0.5 / 50% / 1:1 / 1 in 2
do not accept 1:2 / 50/50
allow 50:50
allow 2 in 4

1

[7]

6.

(a) (i) (cell) membrane

1

(ii) vacuole

1

(b) any **two** from:

- (cell) wall
- chloroplast(s)
ignore chlorophyll
- vacuole
ignore cell sap

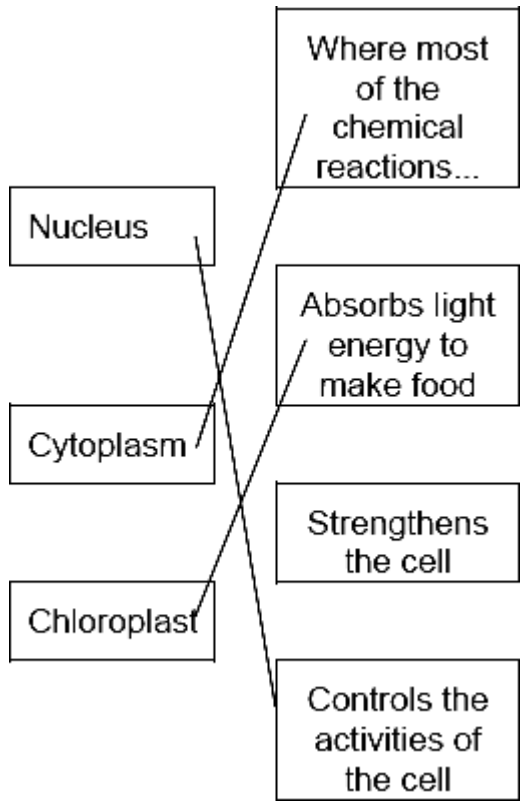
2

(c) diffusion

1

[5]

7. (a)



1 mark for each correct line
mark each line from left hand box
two lines from left hand box cancels mark for that box

3

(b) energy

1

[4]

8.

(a) (i) diffusion

1

(ii) A

1

(b) (i) osmosis

1

(ii) R

1

[4]

9.

(a) (i) root hair

1

(ii) any **two** from:

ignore food

- water
- ions / minerals / nutrients / salts / correct named eg nitrates
ignore N,P,K
- oxygen

2

(b) (i) stomata

1

(ii) diffusion

1

[5]

10.

(a) it has many chloroplasts.

1

(b) (has) cell wall

1

(has) vacuole **or** large / permanent vacuole

*do **not** allow chloroplasts*

assume plant cell throughout

accept converse for animal cell

1

[3]

11.

(a) **A** nucleus

1

B (cell) membrane

1

C cytoplasm

1

(b) any **two** from:

- (contain mitochondria
- many (mitochondria)
- respiration (occurs in mitochondria)

2

[5]

12.

(a) 0.27 (g)

1

(b) potato lost mass

allow potato (cells) lost water

1

- (c) all 3 points plotted correctly
allow ecf from art (a)
allow 1 mark for 1 or 2 correct plots 2
- suitable line of best fit
allow ecf from their plots 1
- (d) 2.6 (arbitrary units)
allow answer from their line 1
- (e) same concentration as inside potato (cells) 1
- (so) no (net) movement of water
allow description of this 1
- by osmosis 1

[9]