Practice Question Set For GCSE
Subject : Biology
Paper-1 Topic: B1 Cell Biology

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) (i) diffusion is down the concentration gradient
for a description of diffusion
ignore along / across gradients
1

to enter must go up / against the concentration gradient
accept by diffusion ions would leave the root

or

concentration higher in the root / plant

or

concentration lower in the soil
1

(ii) active transport
allow active uptake
1

(b) (i) (root hairs →) large surface / area
1

(ii) (aerobic) respiration
*do **not** allow anaerobic*
1

releases / supplies / provides / gives energy
accept make ATP (for active transport)
*do **not** allow 'makes / produces / creates' energy*
1

(iii) starch is energy source / store (for active transport)
allow starch can be used in respiration
*do **not** allow 'makes / produces / creates' energy*
1

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Q2.

(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 <u>water</u> concentration outside
*accept references to hypertonic / hypotonic solutions **or** water potential*

or
higher <u>water</u> concentration inside

1

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Q3.

active transport needs energy **or** diffusion is <u>not</u> energy-dependent

1

any **three** from:

- (energy from) <u>aerobic</u> <u>respiration</u>
- more respiration with <u>O_2</u> **or** <u>more</u> energy release with O_2
- (aerobic) respiration / energy release occurs in mitochondria
  *do **not** allow anaerobic*
- xylose / other sugars absorbed by diffusion / not by active transport
  allow active transport is selective / specific
  ***or** active transport can distinguish glucose and xylose*

3

[4]

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Q4.

D – *many* microvilli (1)
Ex – provide large surface area (1)

five *points made*

max ***3*** *descriptions*

max ***3*** *explanations*

D – *many* capillaries / *good* blood supply (1)
Ex – maintain concentration / diffusion gradient **or** quickly removes food (1)

D – thin wall / one cell thick surface / capillaries near surface (1)

allow villi are thin

ignore villi are one cell thick

Ex – short distance for food to travel (1)

D – *many mitochondria (1)*
Ex – provide energy / ATP for active uptake / transport (1)

[5]

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