Practice Question Set For A-Level
Subject : Biology
Paper-1 Topic: 2 Cells

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) 1. (Rate of) transpiration/evaporation increases due to increased temperature
OR
(Rate of) transpiration/evaporation increases due to increased light intensity
OR
(Rate of) transpiration/evaporation increases due to decreased humidity
OR
(Rate of) transpiration/evaporation increases due to increased wind/air movement;

Reject tide affecting transpiration/water potential/humidity

Correct link needed between factor affecting transpiration and the explanation

2. (So) increased kinetic energy (causing more water loss)
OR
(So) increased water potential gradient (so more water lost)
OR
(So) increased (water) diffusion gradient (so more water lost);

Reject tide affecting transpiration/water potential/humidity

Correct link needed between factor affecting transpiration and the explanation

3. Stomata open (at sunrise/after 5 am) allowing gas exchange
OR
Stomata open (at sunrise/after 5 am) allowing carbon dioxide to enter;

4. (Some) stomata close at midday/after 11 am (reducing transpiration);

Accept at 11 am as the time when stomata close

Ignore reference to tide

4

(b) Correct answer for 2 marks, 6.6̇; 6.67 − 7 (%);;

Accept for 1 mark,

0.05 (correct difference in transpiration rate)

OR

6.6 (correct calculation, but incorrect rounding)

OR

6.25/6.3 (correct calculation using incorrect denominator)

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OR

666/667 correct number sequence but decimal place in wrong place eg
66.7/0.0667

OR

0.75 as denominator

2

(c) 1. **Mark in groups, either 1 to 4 OR 5 to 8**

1. Record mass/length before **and** after;

2. Place in sea water for (specified/equal) time;
   Ignore period of time
   Accept seawater in a dilution series
   Ignore blot dry before initial mass measurement
   Reject 'size' once then allow ECF.

3. Method to remove surface water;
   Accept eg use tissue paper to dry OR blot dry

4. Increase in mass/length shows water has been absorbed by osmosis
   OR
   Increase in mass/length shows cells have lower water potential;
   Accept root/mangrove for cells

OR

5. Put tissue/cells on (microscope/glass) slide;

6. Add seawater (and leave)

7. Observe under (optical) microscope;

8. If cells become flaccid they do not have a lower water potential than seawater
   OR
   (If cells become) turgid cells show water is absorbed by osmosis
   OR
   (If cells become) turgid cells show cells have a lower water potential
   OR
   (If cells are) not flaccid/plasmolysis cells show water is not lost by osmosis
   OR
   (Determine) percentage plasmolysis;
   Accept description of turgid (cells)

4

Accept 'weight' for 'mass'.
Accept 'diameter' for 'length'.

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Q2.

(a) 1. To break down links between cells/cell walls
OR
To separate cells/cell walls
OR
To break down/hydrolyse cellulose/cell wall;
Ignore references to any bonds

2. Allowing the stain to pass/diffuse into the cells
OR
Allowing the cells to be (more easily) squashed;

3. To stop mitosis;
Accept to stop cell division/cell cycle

2 max

(b) 1. To create a single/thin layer of cells
OR
To spread out cells;

2. So that light could pass through;

2

(c) 1. Anaphase;
Reject 'Anaphase I (of meiosis)'

2. Chromatids moved/pulled to opposite poles/ends;
Accept 'chromosomes' for 'chromatids'
Reject homologous chromosomes for chromatids

2

(d) 0.1 / 0.13 / 0.128;
Accept any correct rounding of 0.128205128205128
Reject answers expressed as a percentage

1

(e) 1. (Garlic roots) are a different age
OR
(Garlic) grown in different conditions;
Accept suitable descriptions of conditions, eg in different temperatures

2. (Root tips) from different (garlic) plants/bulbs/species;

3. Single field of view is not representative of a root tip
OR
(Other) students may have looked at more fields of view
OR
(Other) students may have calculated a mean;
Accept 'samples' for 'fields of view'

4. (Different fields of view are from) different parts of the root tip;
Reject different sized fields of view
Reject different number of cells (per field of view)

5. Cells/roots undergo mitosis/cell division at different times/rates;

2 max

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