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

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Mark Schemes

Q1.

(a) Pressure increase at source generated by:

1. Sucrose co-tranported into phloem

   OR

   Sucrose actively transported into phloem;
   Ignore facilitated diffusion

2. Causes decrease in water potential (inside phloem);

3. Water enters by osmosis (into phloem);

3

(b) 1. Carbohydrates made by photosynthesis (in the leaf);
Accept 'sugars' or any named carbohydrate

2. Less sucrose transported into phloem at leaf/source

   OR

   Less sucrose transported to sink/potato/root

   OR

   Less sugar stored as starch;

2

(c) 1. Increased respiration;

2. To provide more ATP for muscle contraction;

3. (More glucose being used so) concentration gradient for glucose

   OR

   Increased numbers of glucose transporter proteins in the membrane;
   For 'transporter proteins' accept channel or carrier proteins

4. (Glucose enters by) facilitated diffusion;
Marks can be awarded across the whole answer

4

(d) Answer key: 4 –

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The secondary structure is held by hydrogen bonds.

The tertiary structure allows the protein to be positioned spanning the whole cell membrane.

1

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Q2.

(a) Site of translation, catalyse the joining of amino acids by condensation reactions;

1

(b) Any **two** from:

rRNA;

(Pre) mRNA;

tRNA;

Ignore capitalization of r, m and t

1 max

(c) 1. Less <u>phospholipids</u> in rough

OR

More protein/glycoprotein in rough

OR

Presence of ribosomes in rough;

Accept references to percentages from Table 1.

2. (More protein/glycoprotein/ribosomes) Rough – production/transport of proteins;

Accept modifies/packages proteins

3. (More phospholipid) Smooth – production/modification/packaging/transport of lipids;

Accept storage/synthesis of carbohydrates

Accept storage of lipds

3

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Q3.

(a) Quaternary

Condensation/phosphorylation/redox

Release/loss/formation

(Aerobic) respiration;;

All correct = **2 marks**,

2–3 correct = **1 mark**,

0–1 correct = **0 marks**

Accept 'elimination', 'production' for release

2

(b) (Catalyses the synthesis of ATP)

1. Active site <u>complementary</u> to ADP + Pi;

2. Enzyme-substrate complex forms;
   'E-S' alone is insufficient

(Allows the movement of H^+ ions)

3. Channel (in membrane/protein/enzyme);
   Accept 'pore'

4. Allows <u>facilitated</u> diffusion of H^+

   OR

   (Channel) has tertiary structure specific for (only) H^+;

4

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