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

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

(a) (Volume)

Correct answer of 57.9 (μm^3) = **2 marks**;;

OR

If volume incorrect, evidence of 2.35-2.45 (as radius) = **1 mark**

(Times larger)

8 (times larger) (or ECF) = **1 mark**;

*58 = **2 marks***
*57.91 = **2 marks***
*Accept 54.3/54 = **2 marks***
*Accept 61.6/62 = **2 marks***
Allow 7.5 – 8.52
ECF Allow any alternative for 8 which shows 463 ÷ their volume

3

(b) 1. Nuclear membrane /nucleolus /vesicles/ lysosomes/ribosomes distinct/visible;

Accept invaginations of membrane distinct/visible
Reject nucleus
Reject mitochondrion

2. EM has greater resolution;

assume 'it' refers to electron microscope

2

(c) Stimulating cytotoxic T cells

OR

Stimulating B cells

OR

Stimulating phagocytes;

Accept 'activate' for stimulating

1

(d) 1. Anticodon (on tRNA) binds to (complementary) codon (on mRNA);

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2. (tRNA) brings/carries specific amino acid (to ribosome);

2

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Q2.

(a)

Shape	Surface area / cm^2	Volume / cm^3	Surface area to volume ratio
C	96	64	1.5 : 1
D	136	64	2.125 : 1

; ;

Mark as columns
Allow ECF for ratio
Allow 2.1:1 and 2.13:1 for D
Ignore fractions for ratio

2

(b) 3520;

1

(c) Repeat with an undamaged (shape C) block;

Accept 'Replace with an undamaged (shape C) block and repeat'
Allow 'Repeat with a new block (shape C)'

1

(d) Any **three** for **2 marks**;;

Any **two** for **1 mark**;

1. Temperature

2. Concentration of indicator

3. pH/concentration of solution/acid

4. pH/concentration of alkali in blocks

5. Concentration/type of agar

6. Ensure total surface area of the block is in contact with the solution/acid

Ignore
Mass, shape, volume

2 max

(e) 1. Diffusion (across the cell surface membrane);

2. Large organisms have small(er) sa : vol ratio

OR

Single-celled organisms have a large(r) sa : vol ratio;

3. Diffusion pathway would be too long

OR

(Rate of) Diffusion too slow;

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Must be in the context of larger organisms

3 max

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