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) Row 2;

**1**

(b) **D** - Granum/grana/thylakoid(s);

**E** - starch/lipid;

*Accept oil for E*

**2**

(c)

*Accept converse in context of electron microscope*

1. Light has long(er) wavelength;
   *Ignore: optical microscope has long(er) wavelength.*

2. (So) low(er) resolution;
   *Accept poor resolution*
   *Ignore: weaker resolution*
   *Ignore references to magnification*
   *Accept correct references to values for resolution.*
   *E.g optical 0.2µm – 0.3 µm*

**2**

(d) (70S) Ribosome;

*Reject: (80S) Ribosome*

**1**

(e) Correct answer of 7455 = 2 marks;;

Accept for 1 mark answers in range:

7717.5 to 7718 (44.1% of 17500)

If incorrect answer, accept for 1 mark working shows an attempt to subtract 262.5

**2**

(f) 1. (Ice) cold to prevent/reduce enzyme activity;
   *For 1, 2 and 3 reject context of cell*

2. Buffered to prevent denaturing of enzyme/protein;
   *Accept description of buffer.*
   *Accept: prevent change of tertiary structure.*

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3. Same water potential/ Ψ to prevent lysis/bursting (of organelle);

*Accept: isotonic for same water potential.*

*Reject: references to turgor or plasmolysis or crenation.*

**3**

**[11]**

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Q2.

(a)

*Mark in pairs as (1 and 2 **OR** 3 and 4)*

1. Chromosomes/centromeres cannot attach (to spindle)

**OR**

Chromosomes cannot line up (on spindle);

2. (So, no) metaphase;

**OR**

3. Chromatids cannot separate (on spindle);
   *Accept description of 'cannot separate' e.g cannot move to poles*
   *Ignore 'split'*

4. (So, no) anaphase;

**2**

(b) 1. Cancer cells divide more/uncontrollably/rapidly
**OR**
Healthy cells divide less/slowly;

**1**

(c)

*Ignore references to spindle fibres*

1. (ABZ) increases/maintains Cyclin B;
2. (So) mitosis (starts but) does not end (no tumour growth);
   *Ignore mitosis will continue*
   *Ignore mitosis stops without qualification.*

3. (ABZ) lowers ratio of Bcl-2 to Bax;
   *Accept (ABZ) decreases Bcl-2 **and** increases Bax*

4. (So) apoptosis occurs/cells die (no tumour growth);

**4**

(d) **In support of suggestion**

1. Stops mitosis (at metaphase/anaphase)/cell division (so no tumour growth)
**OR**
Promotes apoptosis/programmed cell death (so tumour destroyed);

**Against suggestion**

2. Healthy cells (are) damaged/affected
**OR**
Causes side effects;

3. Results from laboratory tests/tests on (isolated) cells
**OR**
No clinical trials/tests on patients/people;
4. Dosage unknown;
5. Effectiveness unknown;
   *2 max for points "Against suggestion"*

**3 max**

**[10]**

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