Practice Question Set For A-Level
Subject : Biology
Paper-1 Topic:1 Biological Molecules

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Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

(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 complementary 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 facilitated diffusion of H^+

OR

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

4

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Q2.

(a) Any **two** from:

1. Galactose is a monosaccharide/monomer;

2. (Polysaccharide is a) <u>carbohydrate</u> polymer;

3. (Several) monosaccharides/monomers/galactose joined by <u>condensation</u> reactions

OR

(Several) monosaccharides/monomers/galactose joined by <u>glycosidic</u> bonds;

2 max

(b) 1. Lactose contains (alpha) glucose **and** GOS does not

OR

Lactose contains (alpha)glucose + galactose **and** GOS contains only galactose;

2. Lactose is a disaccharide **and** GOS is a polysaccharide;

3. Lactose has one glycosidic bond **and** GOS has many glycosidic bonds;
Accept 'more than one' for many

2 max

(c) 1. Active site (only) <u>complementary</u> to starch

OR

Active site not <u>complementary</u> to GOS;
Ignore 'hydrolysis'

2. (Due to) tertiary structure;

2

(c) 1. Provides galactose/sugar/monosaccharide;

2. (Bacteria use the galactose/sugar) for respiration;

3. (Bacteria use the galactose/sugar) for binary fission;
Reject 'glucose' for galactose/sugar once only
Accept (cell) division /replication/reproduction for binary fission
Reject mitosis;

3

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Q3.

(a) 1. Breaking of ester bonds;

2. By addition of water;

Accept 'using', 'with' for addition

2

(b) 1. Emulsify lipids/fats;

Allow descriptions

2. Increases surface area (of lipid/fat) for (increased) lipase activity;

3. Form micelles;

Ignore 'neutralise'/ 'increase the pH'

2 max

(c) 1. Mutation results in (a new) allele;

2. Those with the (new) allele able to digest milk/triglycerides;

3. Individuals with CEL/allele more likely to (survive and) reproduce;

Accept 'pass on allele/characteristic' for reproduce

4. Directional selection;

5. Increase in frequency of (this) allele in population;

Accept description of increasing frequency, eg 'more common', 'higher proportion' but ignore increase in number of allele

*Allow ECF for use of gene rather than allele after not awarding mark in the first instance but **max 3** overall.*

Accept 'mutation' for allele

4 max

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