Practice Question Set For A-Level
Subject : Biology
Paper-2 Topic:5 Energy Transfer In And Between Organisms

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) (i) pigment reflects / does not absorb green or yellow or orange;
pigment absorbs blue or violet;
pigment absorbs red;
(accept correct wavelengths instead of colours)
(any 2 for 1 mark)

1

(ii) light (energy) absorbed by chlorophyll;
raises energy level of electrons / electrons are excited / emitted;
ATP formed;

3

(b) more wavelengths / colours absorbed;
more (efficient) photosynthesis can occur at these depths / low light intensities
or
more (efficient) photosynthesis can occur when some wavelengths are not present;

2

[6]

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Q2.

(a) used in (aerobic) respiration / to provide energy / ATP
(and not replaced by breathing) / used up by <u>muscle</u> and not replaced;
(reject used up and used up and not replaced)

1

(b) 36;

1

(c) converted back to pyruvate / glycogen / glucose / CO_2 and H_2O;
<u>reacted</u> with oxygen / <u>oxidised</u>;
(reject "breaking down" with respect to glycogen and glucose)

2

(d) (i) vasoconstriction / contraction of muscles in arteries / arterioles /
arteries / arterioles close;
(reject contraction of arteries / arterioles / capillaries)

1

(ii) supplies oxygen / glucose or <u>removal</u> of carbon dioxide / lactate;
so cells can respire when not contracting / breathing;

2

[7]

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Q3.

(a) zooplankton nearer surface at night;
algae only found at surface;
photosynthetic;
no / little light below 30 / 40m;

3

(b) (i) with increasing time predators have been present in the lake, the greater the depth at which the zooplankton occur during the day;

1

(ii) variation in migration behaviour;
vertical migration reduces chance of predation / prey can't be seen in low light intensity;
those that migrated more likely to reproduce;
genes / alleles (for behaviour) passed to next generation;
increase in frequency of gene / allele in population;

3 max

[7]

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