Practice Question Set For A-Level
Subject : Biology
Paper-2 Topic: 7 Genetics populations evolution and ecosystems

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

Mark Schemes

Q1.

(a) 10

(reject: 9.76)

1

(b) isolation (on islands);
variety of habitats / conditions different from origin / other islands;
differing pathways of natural selection;
leading to organisms too different to interbreed.

3 max

[4]

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Q2.

(a) angle, moisture and pH

(all required)

1

(b) system for subdividing quadrat into, e.g. many squares;
method of estimating cover in small squares, e.g. counting those where cover over 50%, or cover at points (of intersection);

(not just 'count squares with vegetation' unless very small)

2

(c) increasing vegetation cover is related to increasing moisture content

(allow 'affects' moisture content or vice versa, not 'causes);

correlation is significant / not due to chance / can reject null hypothesis / only 1 in 20 / 5% probability that the correlation is due to chance;

2

(d) factor; and linked effect e.g.
wind-blown particles trapped;
accumulation of soil;
OR
accumulation of organic / dead / decomposed matter / humus;
increase in mineral ions / improved water retention / improved soil structure;
OR
nitrogen fixation;
increased nitrate concentration / improved soil fertility;

2 max

[7]

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Q3.

(a) (i) tips colonised by short-lived plants / short lived plants are pioneers;
short-lived plants fast growing / spreading / distribute seeds quickly;
short-lived plants change the environment e.g. make conditions more favourable for long-lived plants;
valid reference to competition;

(ii) long-lived plants compete with each other;
death of some long-lived plants;
more niches / leaving spaces / areas for growth of short-lived plants; short-lived plants recolonise;

6 max

(b) control of named variable e.g. light, water-content, nutrients;
large numbers of both species / 10+ individuals;
range of different concentrations of zinc;
valid measurement of growth, height / leaf area / root growth / numbers / mass / % germination;
statistical analysis / correlation between the two sets of data;
OR
large number of samples taken (in the field);
principle of determining zinc concentration of soil;
valid measurement of growth, height / leaf area / root growth / numbers / mass / % germination;
statistical analysis / correlation between the two sets of data;

3 max

[9]

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