Practice Question Set For A-Level
Subject : Biology
Paper-2 Topic: 6 Organisms Response To Their Environment

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Name of the Student:_____
Max. Marks : 15 Marks **Time : 15 Minutes**

Mark Schemes

Q1.

(a) In table:

D
B
C

All 3 correct = 2 marks;;

2 correct = 1 mark;

0 or 1 correct = 0 marks

2

(b) (i) myelin insulates / prevents ion movement; saltation / described re leaping node to node;

2

(ii) cat has higher body temperature;
ignore references to homoiothermy' / warm-blooded
faster diffusion of ions / faster opening of ion pores / gates / channels;

2

(c) 1 increasing stimulus (potential) causes decrease in potential difference / rise in potential at P;

2 1 or 2 is sub-threshold / 1 or 2 does not give action potential / 3 or 4 is above threshold / 3 or 4 does give an action potential;

3 influx of Na^+ ions; *(not just Na / sodium)*

4 voltage-gated channels (in axon membrane) opens / opens Na^+ channels / membrane more permeable to Na^+
(NOT just Na / sodium);

5 sufficient for stimulation of adjacent region of axon therefore impulse propagated (from P to Q);

5

(d) 1 X / Acetylcholine → opening of Na^+ channels / increases Na^+ permeability and Na^+ ion entry into Z;

2 Y / Cl^- entry - lowers potential / increases potential difference / makes potential more negative;

3 X stimulates and Y inhibits (Z);

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4 balance of impulses from X and Y determines whether Z fires action potential / determines whether potential rises above threshold;

4

[15]

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