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

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) 1. Amylase;

2. Glycosidic;

3. Peptide;
Reject dipeptide/ polypeptide bond

4. Amino acid(s);

Biological molecule	Enzyme	Name of bond hydrolysed	Product of digestion
	Amylase	Glycosidic	
		Peptide	Amino acid(s)

4

(b) 1. Add biuret (solution);
Reject burette or Beirut
Reject heat
Accept a description of the biuret test: eg copper sulfate and sodium hydroxide or $CuSO_4$ + NaOH or alkaline copper sulfate
Purple (colour produced);
Accept lilac/violet/mauve for purple

2

(c) 1. (Positive because) enzymes are protein;

2. (Because) enzymes not used up (in reactions)

OR

(Because) enzymes still present;
Accept correct answer in any order
Accept enzymes reused for enzymes not used up
Presence of enzyme after reaction must be implied

2

(d) Correct answer of 1.30 = **2 marks**;;

Evidence of correct rearranged equation, for example

Maximum rate of reaction = k_{cat} × Enzyme concentration = **1 mark**

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OR

Evidence of 1 or 1.298 or 1.29 or 1.3 (correct answer but incorrect significant figures) = **1 mark;**

2

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Q2.

(a) 1. (In) DNA;

2. (In) RNA;

If neither DNA or RNA named allow 1 mark for nucleotide/nucleic acid/phosphodiester bond/sugar-phosphate backbone

3. (In) ATP/ADP;

Accept any other correct biological compound containing phosphate; eg (in)RuBP or GP or triose phosphate or NAD

4. Phosphorylation;

Accept binds with substance to make it more reactive

5. (In) phospholipids;

2 max

(b) 1. Increased (plasma) acidity

OR

Decreased (plasma) pH;

2. Denatures (protein)

OR

Changes (protein) tertiary structure

OR

Changes active site (shape)

OR

Changes antigen-binding site (shape);

Accept description of bond changes, eg 'disrupts hydrogen/ ionic bonds' for 'changes in tertiary structure'

2

(c) 1. Equal positive and negative (in both);

Accept answers in either order

Ignore reference to sodium ions

Accept no overall charge or no net charge

2. Higher (ion concentration) in cytoplasm;

Ignore more ions in cytoplasm

2

(d) 1. (Sodium) ions move in (to cells) by <u>facilitated</u> diffusion down a concentration gradient;

Accept a description of the concentration gradient, eg from high (concentration) to low (concentration)

2. (Sodium) ions move out (of cells) by active transport against a concentration gradient;

Accept a description of transport against a gradient, eg from low (concentration) to high (concentration)

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