

Name of the Student: _____

Max. Marks : 25 Marks

Time : 25 Minutes

Mark Schemes

- Q1.**
- (a) stomach and pancreas 1
- (b) all points plotted correctly
 allow 1 mark for 3 points correctly plotted 2
- smooth curve drawn through all the points 1
- (c) as concentration of protein increases the percentage of light passing through decreases 1
- (because) mixture more cloudy
 allow idea of more particles in suspension 1
- (d) use protein concentrations between 2 and 10 g/dm³ 1
- (e) any one from:
- to allow them to reach 37 °C
 to allow them to reach body temperature
 - so they would be at the optimum temperature
 allow so they would be at the same temperature
 - so reaction temperature controlled
 allow temperature affects enzyme activity 1
- (f) correctly read concentration at 57% from their graph 1
- (g) their value given in part (f) – 0.5
 allow use of different values over straight line portion of graph 1
- answer for their value given in
- 03.6 – 0.5
 12 1

- (h) (protease from organ **B**) is inactive **or** rate of digestion is zero **and** protease from organ **A** is active

*allow only protease from organ **B** is inactive*

1

any **one** from:

- enzyme denatured by pH
- at the wrong pH
- enzyme not specific for this protein

allow active site damaged / changed by pH

1

[13]

Q2.

- (a) 36 000 (cm³)

1

- (b) 11600 / 1200

1

9.66666r

allow any number of decimals

1

- (c) muscles need more energy (for contraction)

1

(so) more oxygen / glucose needed

need at least one reference to 'more' for full marks

allow so more carbon dioxide / thermal energy needs to be removed

1

(for) increased respiration

1

- (d)

Level 3: Relevant points (differences / functions) are identified, given in detail and linked logically to form a clear account.	5-6
Level 2: Relevant points (differences / functions) are identified and there are attempts at logical linking. The resulting account is not fully clear.	3-4
Level 1: Points are identified and stated simply, but their relevance is not clear and there is no attempt at logical linking.	1-2
No relevant content	0
Indicative content • artery has a thicker wall • (because) artery has to withstand higher pressure	

• artery has thicker layer of elastic tissue / fibres • (so) it can stretch • (so) artery returns to original size / shape • artery has thicker layer of muscle • to maintain a force on the blood • vein has valves • (valves) prevent backflow of blood • artery carries blood away from the heart • vein carries blood towards the heart ignore references to oxygenated / deoxygenated blood	
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