

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

Mark Schemes

Q1.

- | | | | |
|-----|------|---|---|
| (a) | (i) | 29.47(29.5);
<i>(2 marks for correct answer)</i>

40% / 0.4 of 2800 / 38; | 2 |
| | (ii) | released as heat; | 1 |
| (b) | (i) | glucose only partly broken down / only broken down to lactate; | 1 |
| | (ii) | lactate / lactic acid has built up / been produced;
oxygen used to break down lactate / convert it back to
pyruvate / glucose / glycogen; | 2 |

[6]

Q2.

- (a) (more cristae / larger surface area) for electron transport chain / more enzymes for ATP production / oxidative phosphorylation; muscle cells use more ATP (than skin cells)(not just more respiration);

2

- (b) (i) pyruvate;

1

- (ii) carbon dioxide formed / decarboxylation;
hydrogen released / reduced NAD formed;
acetyl coenzyme A produced;

2 max

- (c) NAD / FAD reduced / hydrogen attached to NAD / FAD;
 H^+ ions / electrons transferred from coenzyme to coenzyme / carrier to carrier / series of redox reactions;
energy made available as electrons passed on;
energy used to synthesise ATP from ADP and phosphate / using ATPase;
 H^+ / protons passed into intermembrane space;
 H^+ / protons flow back through stalked particles / enzyme;

3 max

[8]

Q3.

- (a) (i) RuBP – 5; GP – 3; TP – 3; Glucose – 6;
(all correct = 2 marks; 3 or 2 correct = 1 mark) 2
- (ii) stroma; 1
- (iii) light-dependent reaction / (photo)phosphorylation;
(accept photolysis) 1
- (iv) 5 out of 6 / 83% / equivalent; 1
- (b) enzymes involved / not a photochemical reaction;
slow rate of enzyme / chemical reaction at low temperature /
less kinetic energy / fewer collisions; 2

[7]