

**Name of the Student:** \_\_\_\_\_

**Max. Marks : 13 Marks**

**Time : 13 Minutes**

Mark Schemes

Q1.

1. Light (energy) excites / raises energy level of electrons in chlorophyll;
2. Electrons pass down electron transfer chain;  
*Q Accept any reasonable alternative for electron transfer chain.*
3. (Electrons) reduce carriers / passage involves redox reactions;
4. Electron transfer chain / role of chain associated with chloroplast membranes / in thylakoids / grana;  
*Example such as chemiosmosis;*
5. Energy released / carriers at decreasing energy levels;
6. ATP generated from ADP and phosphate /  $P_i$  / phosphorylation of ATP;

[5]

Q2.

- (a) Krebs cycle / link reaction / pyruvate to acetylcoenzyme A;  
*Q Accept valid alternative for any of these steps.*

1

- (b) (Respiratory reactions controlled by) enzymes;

Rate decreases as less kinetic energy / fewer collisions (between substrate and active site) fewer E-S complexes formed;

2

- (c) Requires hydrogen / electrons / is reduction;

Hydrogens from reduced NAD / reduced NAD reduces (pyruvic acid) / reduced NAD oxidised;

*Information may be on diagram*

2

- (d) Respiring anaerobically;

(Anaerobic respiration / respiration with nitrogen) less efficient / produces less ATP;

More anaerobic respiration / more glucose / substrate must be respired to produce same amount of ATP (so more carbon dioxide produced);

3

[8]