

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE  
OF BACHELOR OF SCIENCE**

**BOTA 101: GENERAL BOTANY**

**STREAMS: BSC (AGED) Y1S1 (SB)**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 1/12/2014**

**8.30 A.M. – 10.30 A.M.**

**INSTRUCTIONS: ANSWER ALL THE QUESTIONS IN SECTION A AND TWO  
QUESTIONS IN SECTION B**

**SECTION A – 30 MARKS**

1. (a) List three factors used in the classification of algae. [3 marks]  
(b) State two uses of algae [2 marks]
2. (a) Describe the whorls of a typical flower. [4 marks]  
(b) Give the function of mesophyll cells on a leaf. [1 mark]
3. (a) Illustrate the structure of a foliose lichen thallus. [3 marks]  
(b) State the role of fungi in soil [2 marks]
4. (a) Describe facilitated diffusion as a means of transport of materials in plants. [3 marks]  
(b) Explain why minerals are not passively absorbed by roots. [2 marks]
5. (a) State the importance of photosynthesis. [1 marks]  
(b) Outline four differences between monocot and dicot stems. [4 marks]
6. (a) Explain why glucose is oxidized in several small steps in a cell. [2 marks]  
(b) Identify the site for the following stages of respiration. [3 marks]
  - (i) Glycolysis
  - (ii) Citric acid cycle
  - (iii) Oxidative phosphorylation

**SECTION B: ANSWER TWO QUESTIONS – 40 MARKS**

7. Describe the synthesis of ATP and NADPH during the light reactions of photosynthesis using an illustration. [20 marks]
8. Discuss the economic importance of  
(i) Fungi [10 marks]  
(ii) Lichens [10 marks]
9. Describe and illustrate the following concepts in plants.  
(i) Mass flow hypothesis [10 marks]  
(ii) Placentation [10 marks]
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