JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS

BACHELOR OF EDUCATION (SCIENCE)

FOURTH YEAR FIRST SEMESTER (ACADEMIC YEAR 2013/2014

SBT 401 PLANT PHYSIOLOGY AND BIOCHEMISTRY

INSTRUCTIONS

1. Answer ALL questions in Section A and TWO questions from Section B
2. Read the Questions carefully before answering

SECTION A (30 Marks)

1. Briefly explain briefly the different types of carbohydrates (3 Marks)
2. Differentiate between glycolysis and fermentation (3 Marks)
3. Outline the stages of the Krebs cycle (3 Marks)
4. Name the five coenzymes required by the pyruvate dehydrogenase complex (3 Marks)
5. Describe briefly oxidative phosphorylation (3 Marks)
6. Explain the role of malonyl CoA in fatty acid biosynthesis and how it is synthesized from acetylCoA (3 marks)
7. With the help of diagrams briefly describe the Nitrogen cycle(3 Marks)
8. Explain the biochemistry and physiology of Nitrogen fixation.(3 Marks)
9. Explain the differences between enzymes and coenzymes. (3 Marks)
10. Briefly describe the characteristics of the genetic code (3 Marks)

SECTION B (40 Marks)

11. Describe the glycolytic process (20 Marks)
12. Give an account of Beta-Oxidation of fatty acids (20 Marks)
13. Describe the process of photosynthesis under the following subheadings:
    a. Calvin Cycle reactions (6 Marks)
    b. CAM photosynthesis (6 Marks)
    c. Diffferences between C3 and C4 photosynthesis (8 Marks)
14. Describe with suitable illustrations the process of gluconeogenesis (20 Marks)