

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

**FACULTY OF APPLIED SCIENCES
DEPARTMENT OF FOREST RESOURCES AND WILDLIFE MANAGEMENT
BACHELOR OF SCIENCE HONOURS DEGREE
MAIN EXAMINATION**

PLANT PHYSIOLOGY: EFW 2103

January 2013

Time Allowed: 3 HOURS

Total Marks: 100

INSTRUCTIONS TO CANDIDATES:

Answer **QUESTION ONE** and any **THREE** others. Each question carries **25 marks**.

1. Discuss plant bioproductivity and show how it can be affected by environmental conditions and other plant processes.
2. Describe various instances in the soil – plant – air system in which osmotic potential is used beneficially by plants.
3. A green plant synthesises hexose sugar in its leaves and absorbs ammonium ions by its roots. What further processes of transport and synthesis must occur, and in what tissues, before some of the organic nitrogen compounds synthesised from these raw materials will be exported from the roots.
4. (a) Identify the main function of ATP in cell metabolism and state briefly how it fulfils this function. **[8 marks]**

(b) Explain how ATP is generated by the cells of a green plant in the light and in darkness. **[17 marks]**
5. Discuss the nature and role of phytohormones in floral phenology.
6. Describe stress physiology of plants under **named** environmental pollution.

***** END OF PAPER *****

