

**THE UNIVERSITY OF BAMENDA (UBA)**

**Competitive entrance examination into first cycle E.N.S Bambili**

**Academic year 2009**

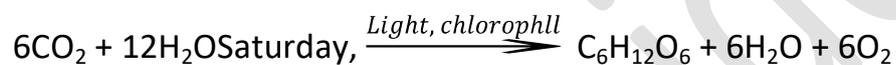
**Series: Biology.**

**Paper: Biology.**

**Duration: 3 hours.**

**Coef: 4**

1. The process of photosynthesis can be summarized as in the following equation:



- Comment on the products of the equation.
  - Under what conditions can  $\text{CO}_2$  become a limiting factor?
  - What is the significance of photosynthesis in the current context of global warming?
  - An experimenter found that the fixation of  $\text{CO}_2$  by chlorella cells takes place not only in the light, but also in the dark. However, after about 2 hours of continuous dark, no fixation occurs. Explain these observations. (30 marks)
2. The heart is a hollow muscular organ that contracts and pumps blood through the blood vessels of the body:
- Draw a large and well labeled diagram of the longitudinal section of the mammalian heart.
  - Write short notes on SA node, cardiac muscles, lymphatic circulation
  - Give two diseases related to the heart stating their manifestation, causes and possible prevention. (25 marks)
3. Explain the biological basis of the following practices, and in each case show its value to man:
- Artificial insemination
  - Immunization against infectious diseases
  - Determination of a patient's blood group before giving him a transfusion
  - Composting garden and household refuse
  - Incorporating leguminous plants in crop rotation. (25 marks)