**IFS - Indian Forest Service Botany Previous Year Paper (II) (2006)**

**PAPER -II** :

**SECTION A**

**1. Write short notes on any four of the following in about 150 words each:**(a) Non-green plastids (10)  
(b) Stages of cell cycle (10)  
(c) Y-chromosome (10)  
(d) Drawinism (10)  
(e) Correlation (10)

**2.**(a) With suitable sketches, distinguish between the major types of cell surface receptors. (20)  
(b) Explain in detail the structure of G protein and its role in signal transduction. (20)

**3.**(a) Discuss the principles of the double- helix structure of DNA proposed by Watson and Crick, and compare with that of ‘Z-DNA’. (15)  
(b) Explain different types of DNA replication in prokaryotes. (25)

**4.**(a) Evaluate the different gene transfer techniques for the production of transgenic plants. (25)  
(b) Enumerate the types of selectable marker genes employed in developing transgenic plants. (15)

**SECTION B**

**5. Write short notes on any four of the following in about 150 words each**(a) Hydroponics (10)  
(b) Nitrogenase (10)  
(c) Dormancy (10)  
(d) Endemism (10)  
(e) Xerosere (10)

**6.** (a) Describe the biochemical process by which two molecules of ATP are produced from one molecule of glucose. Mention the names of the participating enzymes. (20)  
  
(b) Discuss the role of motochondrion for pyruvic acid oxidation. (20)

**7.** (a) What are the physiological changes associated with plant senescence? Add a note on senescence retarding hormones. (25)  
(b) Enumerate the ethylene inducded responses in plants. What are the commercial uses of enthylene? (15)

**8.**(a) Discuss the causes and consequences of global warming. (20)  
(b) What is the significance of ozone layer? What are the contributing factors for its depletion and what can be the possible consequences? (20)