

NWFP, PUBLIC SERVICE COMMISSION, PESHAWAR

COMPETITIVE EXAMINATION FOR PROVINCIAL MANAGEMENT SERVICE, 2008

BOTANY, PAPER-II

Time Allowed: 03 Hours

Maximum marks: 100

Note: Attempt any **FIVE** questions.

- I. What are the morphological and biochemical adaptations of CAM plants that help them survive in the desert? (20)
- II. How do plant hormones differ from animal hormones? Describe the physiological effects of ethylene in plants. (20)
- III. Discuss various edaphic and biotic factors in relation to plant growth. (20)
- IV. (a) What is plant succession? Give detailed account of plant succession starting in a lake. (10)
(b) Write a note on "pollution and conservation of natural resources". (10)
- V. Describe ultrastructure of cell membrane and chloroplast along with suitable illustrations. (20)
- VI. "Each gene must have a structure that allows controlling substances to recognize the gene, bind to it, and activate it at proper time". Elaborate the statement. (20)
- VII. What is gene mutation? Give a critical account of various types of mutations and their significance. (20)