TM143040B **Reg. No……**
Name …….

M. Sc. DEGREE (CSS) EXAMINATION, FEBRUARY 2016
THIRD SEMESTER - BOTANY
BOT3PP - PLANT PHYSIOLOGY AND PLANT BREEDING
(Supplementary Examination- 2014 Admission)

Time: Three Hours **Maximum Weight: 30**

PART A

I. Answer any *six* questions. Each question carries a weight of 1

1. What do you understand by quantum requirement of photosynthesis?
2. Write briefly on the modern trends in plant breeding
3. What is meant by hybridization? What is its significance?
4. Write notes on the following.(1) Heterosis, (2) acclimatization
5. Write a critical account on physiology of flowering
6. Explain the structure and function of ABC transporters
7. Explain the role of Mycorrhizae in nutrient uptake
8. Explain SPAC

(6x1=6)

PART B

II. Answer any *seven* questions. Each question carries a weight of 2

9. What are limiting factors? Describe in detail their significance in relation to photosynthesis
10. What is terminal oxidation? Describe the process with reference to respiration in plants.
11. Define the following.(1). Mutator genes, (2).directed mutagenesis, (3).chimeras.
12. Define drought resistance. Explain briefly the various mechanisms that contribute to drought resistance
13. What do you understand by male sterility? add notes on genetic male sterility
14. Distinguish clearly between drought tolerance and drought avoidance. Describe various morpho-physiological adaptations by plants to combat drought
15. Explain the structure of nitrogenase complex. Explain its action
16. Explain the mechanism of trans-cellular transport in plants
17. Write note on diffusion pressure deficit
18. What are growth regulating substances? Explain the role of auxins and gibberellins in the growth of plants

(7x2=14)

PART C

III. Answer any *two* questions. Each question carries a weight of 5

19. What is photophosphorylation? How does it differ from oxidative phosphorylation?
20. Describe the citric acid cycle in plants and explain how ATP is generated in aerobic respiration
21. Discuss the application of mutation breeding in crop improvement

(2x5=10)