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Register Number :

Date :

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**M.Sc. BOTANY – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2020**

**BO 8318 : PLANT PHYSIOLOGY AND METABOLISM**

Time- 2 ½ hrs Max Marks-70

**This paper contains ONE printed page and THREE parts**

**Draw diagrams and write examples where necessary**

1. **Define any TEN of the following in two or three sentences 10 × 2 = 20**
2. Waxes
3. Nif genes
4. Accessory photosynthetic pigments
5. Anti-auxins
6. Competitive enzyme inhibition
7. Significance of Kranz anatomy in C4 plants
8. Imbibition and its significance in plants
9. β - oxidation
10. Allosteric enzymes
11. Significance of the alternate oxidase system in plants
12. Aquaporins
13. Substrate level phosphorylation with an example showing the reaction
14. **Write critical notes on any FIVE of the following 5 × 6 = 30**
15. a) Structure of ATP

b) ATP is the energy currency of the cell - Justify.

1. Factors affecting enzyme kinetics (any 6)
2. Synthesis of starch and sucrose
3. Schematic representation of glyoxylate pathway
4. Environmental factors (any 3) and internal factors (any 3) affecting rate of transpiration
5. Mechanism of nodule formation in legumes
6. Regulation of Calvin cycle
7. **Give a comprehensive account of any TWO of the following 2 × 10 = 20**
8. Schematic representation of Kreb's cycle. Add a note on its energetics
9. Structure of ATP synthase and mechanism of photophosphorylation
10. a) Biosynthesis of gibberellins

b) Physiological effects of ethylene

**BO 8318\_B**