

Date:

Registration number:

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

**M.Sc. BOTANY – II SEMESTER**

**End SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**BO 8321- Plant Physiology and Metabolism**

**Time: 2½ hrs Max. Marks: 70**

This paper contains ONE printed page and THREE parts

Draw diagrams and write examples wherever necessary

**A. Answer any TEN of the following: 10x2=20**

1. Km and its significance
2. Dimorphic chloroplast
3. Aquaporins
4. Z-scheme
5. Differentiate between protein motif and fold
6. Define each of the terms in the given equation: ΨW= Ψs+Ψp
7. Jasmonates
8. Phosphatidyl glycerol
9. Denitrification
10. Gibbs free energy and its significance
11. Any two factors influencing rate of transpiration
12. Donnan equilibrium

**B. Write critical notes on any FIVE of the following: 5x6=30**

1. Schematic representation of Glyoxylate pathway
2. Physiological effects of Auxin
3. Role and regulation of *nif* and *nod* genes in Biological Nitrogen Fixation
4. Carbon fixation pathway in CAM plants
5. Explain the Cohesion-tension theory
6. Classification, structure and significance of oligosaccharides
7. Active and passive translocation of solutes

**C. Give a comprehensive account of any TWO of the following 2x10=20**

20. Enumerate any two mechanisms of enzyme inhibition

21. Schematic representation of citric acid cycle and add a note on its energetics

22. Explain the structure of ATP synthase and describe the mechanism of photophosphorylation

BO\_8321\_A\_22