MSc-BOT II-202CT(TH)21

M.Sc. 2nd SEMESTER EXAMINATIONS, 2021

SUBJECT: BOTANY

Course Code: BOT/202C (TH) **Course ID: 21352**

Course Title: Biochemistry and Molecular Biology.

Full Marks: 30 **Time: 2 Hours**

The figures in the margin indicate full marks

Answer all the questions.

GROUP-A

(Biochemistry)

1. Answer *any two* of the following questions: 1x2=2

a)What is the function of Acetyl COA Carboxylase?

b) Photorespiratory rate increases in hotter climate, why?

c) What are ampholytes?

d)What are silencer molecules?

2. Answer *any one* of the following questions: 5x1=5

a. Write the importance of Pentose phosphate pathway (PPP) in plant metabolism. Whether the pathway is catabolic or anabolic? Explain. **3+2=5**

b Discuss in short about the different types of enzyme inhibition. What are ribozymes?

4+1=5

3. Answer *any one* of the following questions: 8x1=8

a) Write in detail about post transcriptional modifications in Eukaryotes.Discuss the role of chaperones and chaperonins. What are enhancer molecules? 3+3+3=8

b) State how Rubisco activation is regulated by CO_2, Mg^{2+}, RUBP and CAP1. What would happen if phosphoglycolate remains unchanged in the chloroplast of C3 plants? **6+2=8**

GROUP-B

(Molecular Biology of Plants)

4.Answer *any* two of the following questions: 1x2=2

a. Differentiate REN from Nuclease.

b. What are BAC's?

c.Differentiate between constitutive and inducible gene.

d.What do you mean by stringent replication of plasmids?

4. Answer any one of the following questions: 5x1-5

a. What are Flavr Savr tomato? Add a short note on Pbr322.

1+4=5

b.Write down the characteristic features of a good vector. What is homologous recombination? **4+1=5**

6.Answer any one of the following questions: 8x1=8

a.What do you mean by cohesive ends? Write a note on applications of tissue culture. What are cosmids? (2+4+2=8)

b.Write a detail note on nomenclature of REN with their target sequences. Define polylinkers. (6+2=8)