

--	--	--	--	--	--	--	--	--	--



**GIET UNIVERSITY, GUNUPUR - 765022**  
**M. Sc (Third Semester) Examinations, December - 2023**  
**22PSCBOE306 - Plant Metabolism**  
**(Plant Science)**

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

**PART – A****(2 x 10 = 20 Marks)**Q.1. Answer *ALL* questions

	CO #	Blooms Level
a. How acetyl CoA can be activated during fatty acid biosynthesis?	CO1	K3
b. Write down the structure of triglycerides?	CO1	K2
c. Mention the sites for glycerol biosynthesis in plants and animals?	CO1	K2
d. Give the significance of $\omega$ -oxidation of fatty acids?	CO1	K2
e. What is the importance of $\alpha$ -oxidation of fatty acids?	CO2	K1
f. Illustrate the role of carnitine in fatty acid oxidation?	CO2	K3
g. Give any two examples of bacteria doing symbiotic nitrogen fixation?	CO3	K2
h. Define ammonification? Write the steps of ammonification.	CO3	K1
i. What are secondary metabolites? Give examples.	CO4	K1
j. What is the biological significance of phenolics in plants?	CO4	K1

**PART – B****(10 x 5=50 Marks)**Answer ANY FIVE questions

	Marks	CO #	Blooms Level
2. a. Write down the process of $\alpha$ -oxidation of fatty acids?	5	CO1	K2
b. Discuss the steps of Ketogenesis?	5	CO1	K2
3.a. Explain the steps of $\beta$ -oxidation of fatty acids?	5	CO1	K1
b. Explain the steps of biosynthesis of triglycerols?	5	CO1	K1
4. a. Discuss about the mechanism of symbiotic and asymbiotic nitrogen fixation in plants?	8	CO2	K2
b. Differentiate between nitrification and denitrification?	2	CO2	K2
5.a. Describe the process of uptake and transport of sulphur in plants?	5	CO2	K2
b. Schematically explain the Sulphur Cycle?	5	CO2	K3
6. a. Discuss the role and source of nitrogen in plants?	5	CO3	K2
b. Explain about the non biological fixation of nitrogen?	5	CO3	K1
7.a. Discuss the mechanism of nitrogen cycle with diagram?	6	CO3	K2

b.	Write the genetics and regulation of nitrogenase enzyme?	4	CO4	K2
8. a.	Discuss the different secondary metabolites found in plants with their roles?	5	CO4	K2
b.	Explain the mechanism of Shikimic acid pathway?	5	CO4	K1