Gandhi Institute of Engineering and Technology University, Odisha, Gunupur

(GIET UNIVERSITY)

M.Sc. (Third Semester – Regular) Examinations, December – 2025

24MLSPC23004 – Plant Metabolism

(Life Science-Plant Science)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Mention the role of Aminoacyl-tRNA synthetase in protein synthesis?	CO1	K1
b. Name the enzyme converts Acetyl-CoA to Malonyl-CoA?	CO2	K3
c. Which form of Sulphur is absorbed by the plants?	CO4	K2
d. What environmental factor can inhibit the nitrogenase enzyme?	CO5	K1
e. How do secondary metabolites differ from primary metabolites?	CO6	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain the detail steps of translation in prokaryotes?	10	CO1	K2
(OR)			
b. Highlight the importance of Proteomics and its application?	5	CO1	K3
c. Give the importance of protein in cell?	5	CO1	K2
3.a. Discuss the process of biosynthesis of glycerol?	5	CO2	K2
b. Mention the steps of Ketogenesis and its reactions?	5	CO2	K1
(OR)			
c. Explain the details steps and process of Biosynthesis of Fatty Acids?	10	CO3	K2
4.a. Discuss the mechanism of sulphur uptake and transportation in plant?	5	CO4	K2
b. Give the role of sulphur and its compounds in plants?	5	CO4	K3
(OR)			
c. Explain the process of manipulation of Sulphur composition in Seeds and mention its importance?	5	CO4	K2
d. How Sulphur assimilation occurs in plants? Explain the steps?	5	CO4	K2
5.a. Discuss the role of nitrogen in plant?	5	CO5	K1
b. How non biological fixation occurs? Explain.	5	CO5	K2
(OR)			
c. Highlight the genetics of nitrogen fixation and discuss the role of genes?	5	CO5	K3
d. Discuss the process of symbiotic nitrogen fixation in plants?	5	CO5	K2
6.a. Give the characteristic of secondary metabolites of plant?	5	CO6	K1
b. Discuss the different secondary metabolites found in plants with their roles?	5	CO6	K2
(OR)			
c. Explain the steps and role of Mevalonate pathway in plants?	10	CO6	K2

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