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Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET UNIVERSITY)

M. Sc. (Ag.) (First Semester - Regular) Examinations, February-2026

SOIL-506 – Soil Biology and Biochemistry

(Soil Science)

Time: 2 hrs | Maximum: 50 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** the questions	CO #	Blooms Level
a. Differentiate between phyllosphere and rhizosphere.	CO2	L2
b. What is root exudates?	CO1	L4
c. Define farm yard manure.	CO5	L1
d. Give the difference between ectorhizosphere and endorhizosphere	CO4	L3
e. Define ammonification.	CO3	L1

PART – B **(6 x 5 = 30 Marks)**

Answer ***ANY SIX*** questions	CO #	Blooms Level
2. What is phyllosphere? Give a brief description about the biochemical reactions in phyllosphere	CO2	L1
3. Discuss microbial interactions in soil with suitable examples	CO1	L2
4. Write about bacteria and protozoa with classification and significance.	CO1	L3
5. Define aerobic composting. Describe two methods of aerobic composting in details.	CO5	L1
6. What is rhizosphere? Briefly describe about root rhizosphere with diagram	CO2	L2
7. Explain the role of Plant Growth Promoting Rhizobacteria (PGPR) in crop production.	CO1	L1
8. Describe Legume- Rhizobium symbiosis and Nonlegume – Frankia symbiosis.	CO4	L2
9. Discuss sulphur oxidation and reduction in soil.	CO3	L2

PART – C **(10 x 1 = 10 Marks)**

Answer ***ANY ONE*** question	CO #	Blooms Level
10. Write down the detailed procedure of vermicompost production with diagram	CO5	L2
11. What is mineralisation? Describe and Draw a neat and clean diagram of N cycle.	CO4	L4
12. Discuss the diversity of soil biota and explain soil microbial ecology. Describe soil microbial biomass and the significance of unculturable soil microorganisms in soil functioning.	CO1	L1

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