



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 6th Semester Examination, 2022

MCBADSE04T-MICROBIOLOGY (DSE3/4)

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

GROUP-A

Answer any five of the following

2×5 = 10

1. Define endophytes with an example.
2. What is rhizospheric effect?
3. Which type of Prokaryotes can produce methane in soil? Give one example of methane producing Prokaryote.
4. Give examples of two microorganisms that can be used as biocontrol agents against insect.
5. Give one advantage and disadvantage of GM crop.
6. Write the functions of Nod factors.
7. What are the roles of PGPR in agriculture?

GROUP-B

Answer any three of the following

10×3 = 30

8. (a) Diagrammatically describe the structural plan of a biogas plant. 4
(b) What is the main chemical component of biogas? 1
(c) Describe in detail about the mechanism(s) of production of this gas by microorganisms within the biogas plant. 5
9. Write short notes on the following (any *two*): 5×2 = 10
(a) Transgenic animals
(b) Bt crops
(c) Plant growth promotion by mycorrhiza.

10. (a) Why soil anaerobicity is detrimental for plants as well as for environment? 5
(b) Discuss about the factors that may regulate microbial activity in soil. 5
11. (a) Write the advantages of biofertilizer over chemical fertilizer. 2
(b) Describe briefly the process of rhizobial inoculant preparation for use as biofertilizer. 4
(c) Give a brief account of the carrier materials used in biofertilizer. 4
12. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$
(a) Green manure
(b) Indicate the biochemistry behind the production of Golden rice
(c) Advantages and disadvantages of biofuel production
(d) Role of microorganisms in Global climate change.

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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