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BACHELOR OF SCIENCE (CBCS-2018 COURSE)
T. Y. B. Sc. Sem-VI : WINTER- 2022
SUBJECT : MICROBIOLOGY : AGRICULTURAL & ENVIRONMENTAL
MICROBIOLOGY

Day : Friday

Time : 10:00 AM-01:00 PM

Date : 16-12-2022

W-18511-2022

Max. Marks : 60

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N. B. :

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labelled diagrams **WHEREVER** necessary.
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Q. 1 Attempt **ANY TWO** of the following: **(12)**

- a) What are mycorrhiza? Write the method for preparation of bioinoculant using mycorrhiza.
- b) Write the composition and method for production of Biogas.
- c) Define the term bioleaching and explain the biochemical mechanism and bacteria involved in the process.

Q. 2 Attempt **ANY TWO** of the following: **(12)**

- a) Enlist various marker methods used for ecological studies of soil microorganisms and explain any one method with its significance.
- b) Write the method for preparation and inoculation of Azotobacterial fertilizer.
- c) Draw a neat labelled diagram and write the working of *in-situ* process of metal extraction using microbes.

Q. 3 Attempt **ANY TWO** of the following: **(12)**

- a) Write in detail on – process of composting.
- b) Enlist various types of water pollutants and explain effect and control of any one pollutant type.
- c) Write on the disease caused in tobacco plant infected with TMV.

Q. 4 Write short note on **ANY FOUR** of the following: **(12)**

- a) Advantages of Biomonitoring
- b) Roll of Biogas in pollution control
- c) Marine pollution
- d) Importance of phosphate solubilising bacteria as bioinoculant
- e) Symptoms of citrus canker disease

Q. 5 Attempt **ANY SIX** of the following: **(12)**

- a) Write names of symbiotic N₂ fixing bacteria and mutual benefits derived by symbionts.
- b) Draw the diagram to demonstrate the floating dome biogas digester.
- c) Define the term beneficiation of metal ores and write the significance of beneficiation.
- d) Define the term bioremediation and the microbe used in bioremediation of oil polluted marine sites.
- e) Write the ecological significance of composting.
- f) Write the structure of nitrogen fixing enzyme and how it is protected from oxygen?
- g) What are nonpoint source pollutants of marine water?