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Total No. of Questions : 11 ]

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# **BPF-2210**

**M.Sc. (Final) Examination, 2022**

**MICROBIOLOGY**

Paper - VII

**(Geomicrobiology, Soil and Agricultural Microbiology)**

*Time : 3 Hours ]*

*[ Maximum Marks : 75*

**Section-A**

**(Marks : 2 × 10 = 20)**

**Note :-** Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

**Section-B**

**(Marks : 5 × 5 = 25)**

**Note :-** Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

**Section-C**

**(Marks : 10 × 3 = 30)**

**Note :-** Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

**Section-A**

1. Attempt all *ten* questions. Answer should not exceed **50** words in each question :

(i) Which chemical factors are responsible for the development of soil ?

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- (ii) Which of the following is an example of Gaseous cycle ?
- (a) Phosphorus Cycle
  - (b) Sulphur Cycle
  - (c) Iron Cycle
  - (d) None of these
- (iii) Explain Humification. How is it important for soil ?
- (iv) What are the major components of the Biogas ?
- (v) Yellow vien mosaic of Bhindi is caused by which organism ?
- (vi) Explain how a plant prevents entry of a bacterial pathogen through its surfaces (Leaf, Stem etc.).
- (vii) Explain the role of *Rhizobacteria* in prevention of plant diseases.
- (viii) Write *two* benefits of *Mycorrhiza* to its symbiotic plants.
- (ix) Give example of one symbiotic and one non-symbiotic N<sub>2</sub> fixing cyanobacteria.
- (x) Give *two* examples of materials used as carrier for biofertilizer production.

### Section-B

**Note** :- Attempt *five* questions in all, selecting *one* question from each Unit. Answer should not exceed **200** words in each question :

#### Unit-I

2. Write a short note on biomining of gold from environmental sites.

*Or*

Give a brief description on Soil Profile.

#### Unit-II

3. Write a note on Silage Preparation.

*Or*

Write a note on Phyllosphere Microorganisms.

### Unit-III

4. Write a note on Papaya Leaf Curl Disease.

*Or*

Write a note on Crown Gall Disease.

### Unit-IV

5. Give a brief account on role *T. Harzianum* in plant disease control.

*Or*

Methods used to control aerial pathogens.

### Unit-V

6. Write about the production and application of *Azotobacter* as a biofertilizer.

*Or*

Write a note on the significance of VAM for plants.

### Section-C

**Note** :- Answer any *three* questions out of five. Answer should not exceed **500** words in each question.

7. Give an illustrative account on 'Soil Microflora : Distribution and Contribution to Ecosystem'.
8. Write an essay on 'Role of Microorganisms in Biological N<sub>2</sub> Fixation'.
9. Give a comprehensive account on Physiology of Parasitism, Mechanism of disease resistance and Host parasite relationship.
10. Write notes on the following :
- (a) Significance of *Thiobacillus* for plants
  - (b) Techniques of application of microorganisms for control of microbial diseases of plants.
11. Give an illustrative description on Microbial insecticides—production, application and economical importance.