

**(MCB40112)**

**UNIT III**

M.Sc. DEGREE EXAMINATION, APRIL 2017.

Fourth Semester

Microbiology

Paper I — ENVIRONMENTAL MICROBIOLOGY

(Regulation 2012)

3. (a) Discuss the transformation mechanisms and importance of carbon and sulphur.

Or

- (b) Explain the beneficial and antagonistic interactions among soil microorganism.

Time : Three hours

Maximum : 70 marks

Answer ALL questions One from each Unit.

**UNIT I**

1. (a) Give an account on the kinds of micropropagules and their adaptations.

Or

- (b) Explain the seasonal and diurnal periodicities of air spora.

**UNIT II**

2. (a) Describe the phytoplankton populations and their importance.

Or

- (b) Write short notes on :

- (i) Coliform test  
(ii) BOD.

**UNIT IV**

4. (a) Explain the mechanism and significance of dinitrogen fixation.

Or

- (b) Write short notes on :

- (i) Ammonification  
(ii) Nitrification.

**UNIT V**

5. (a) Describe the mechanism and importance of degradation of hydrocarbons.

Or

- (b) Write short notes on :

- (i) Biogas  
(ii) Microbial leaching of copper.

**(MCB40212)**

M.Sc. DEGREE EXAMINATION, APRIL 2017.

Fourth Semester

Microbiology

Paper II — AGRICULTURAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer FIVE questions, ONE from each Unit.

All questions carry equal marks.

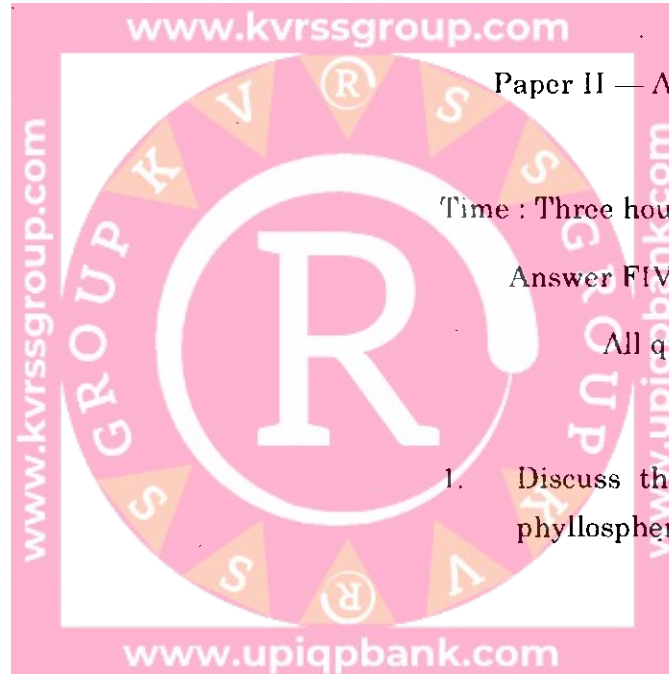
**UNIT I**

1. Discuss the microbial flora of Rhizosphere and phyllosphere.

Or

2. Write short notes on :

- (a) Plant growth promoting Rhizo bacteria
- (b) Soil fertility.



UNIT II

3. Describe the symbiotic and non-symbiotic nitrogen fixing bacteria.

Or

4. Write short notes on  
(a) Nitrogenase  
(b) Legume root nodules.

UNIT III

5. What is Mycorrhiza? Discuss their types and significance.

Or

6. Write short notes on  
(a) PSB and their use.  
(b) Entomopathogenic fungi.

UNIT IV

7. Discuss in detail the Blast disease of rice.

Or

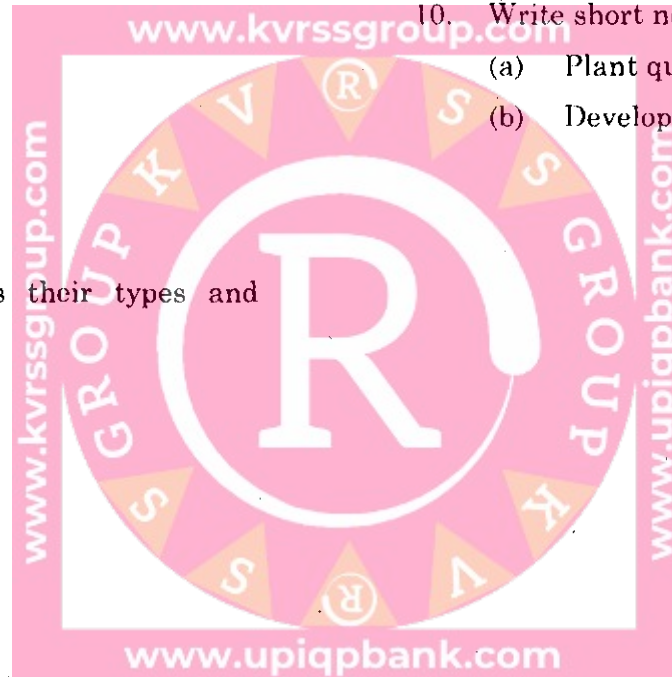
8. Give an account on the common symptoms caused by fungal, bacterial and viral pathogens.

UNIT V

9. Explain the biological control of plant diseases.

Or

10. Write short notes on  
(a) Plant quarantine  
(b) Development of disease resistant varieties.



**(MCB40312)**

UNIT III

M.Sc. DEGREE EXAMINATION, APRIL 2017.

Fourth Semester

Microbiology

Paper III — FOOD MICROBIOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ALL questions.

**UNIT I**

1. Explain the extrinsic and intrinsic factors affecting the microbial activity in foods.

Or

2. Write short notes on :  
(a) Microbial contamination of foods  
(b) Rapid methods for microbial examination of foods.

**UNIT II**

3. Briefly discuss the physical and chemical methods of food preservation.

Or

4. Write short notes on :  
(a) Causes of food spoilage  
(b) Beverages.

5. Discuss the sources of contamination and causes of milk spoilage.

Or

6. Write short notes on :  
(a) Fermented meat products  
(b) Cheese – types and production.

**UNIT IV**

7. Explain colitis, vibriosis and shigellosis types of food poisoning.

Or

8. Write short notes on :  
(a) Bacillary dysentery  
(b) Gastroenteritis syndromes.

**UNIT V**

9. Give an account on international commission on the microbiological specifications for foods and its sampling plans.

Or

10. Write short notes on :  
(a) GMP  
(b) Food control agencies.

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Fourth Semester

Microbiology

Paper IV — INDUSTRIAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours

Maximum : 70 marks

Answer ONE question from each Unit.

**UNIT I**

1. Explain the industrial fermentation of alcohols with suitable examples.

Or

2. Explain the strain development and production methods of tetracyclins.

**UNIT II**

3. Give an account on the various microbial enzymes exploited industrially.

Or

4. Explain the structure, biosynthesis and production of nucleotides.

**UNIT III**

5. Discuss the microbial strains, biosynthesis and production process of L. Glutamic acid.

Or

6. Briefly mention the bacterial polysaccharides, their nature and mechanism of synthesis.

**UNIT IV**

7. What is bioconversion? Explain their types with suitable examples.

Or

8. Explain the transformation of steroids and non-steroid compounds.

**UNIT V**

9. Discuss the methods of enzyme immobilization and their applications.

Or

10. Write short notes on
  - (a) Application of immobilized cells.
  - (b) Matrices for enzyme immobilization.