(MCB40112)

M.Sc. DEGREE EXAMINATION, APRIL 2018

Fourth Semester

Microbiology

Paper I — ENVIRONMENTAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ALL, ONE question from each Unit.

UNIT I

1. (a) Describe the various kinds of micropropagules of air and how they are adapted to its environment.

Or

(b) Write an account on the nature and diseases caused by aeroallergens and their control

UNIT II

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

Or

(b) Write notes on :

(i) BOD determination

(ii) Microorganisms in water bodies.

UNIT III

3. (a) Describe the methods of isolation and estimation of soil microflora.

Or

(b) Describe the transformation of carbon and sulphur in soil.

UNIT IV

4. (a) Describe the ecological significance of transformation of nitrogenous compounds.

Or

(b) Write notes on :

(i) Dinitrogen fixation

(ii) Nitrification.

UNIT V

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

Or

(b) Write notes on :

(i) Leaching process of copper.

(ii) Production of biogas.

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Microbiology

Paper II : AGRICULTURAL MICROBIOLOGY

(Regulation - 2012)

Time : Three hours Maximum : 70 marks

Answer FIVE, ONE question form each Unit.

UNIT I

1. Write an account on plant growth promoting Rhizobacteria.

Or

2. Write short notes on:
   (a) Microbial flora Rhizosphere soil
   (b) Soil fungistasis.

UNIT II

3. Describe Nitrogenase and mechanism of nitrogen fixation.

Or

4. Write notes on
   (a) Free living nitrogen fixing bacteria
   (b) Factors influencing nodulation and structure of nodules.

UNIT III

5. Write an account on VAM propagation and effect of VAM on crop production.

Or

6. Write notes on:
   (a) NPV and CPV
   (b) Mycopepticides.

UNIT IV

7. Describe the concept of disease in plants and symptoms caused by pathogenic Bacteria and Viruses.

Or

8. Write an account on Tikka disease of Ground nut.

UNIT V

9. Describe the principles of plant disease control.

Or

10. Write notes on:
    (a) Development of disease resistant varieties
    (b) Biological control of plant diseases

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Paper III — FOOD MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer FIVE, ONE question from each Unit.

UNIT I

1. Describe the methods for microbial examination of Foods.

Or

2. Write short notes on :

(a) Extrinsic factors affecting microbial activity in Foods.

(b) Sources of microbial contamination of foods.

UNIT II

3. Write an account on Food preservation methods.

Or

4. Write notes on :
   (a) Spoilage of Poultry and egg.
   (b) Spoilage of beverages.

UNIT III

5. Enumerate the microorganisms in Milk samples and Fermented milk products.

Or

6. Write notes on :
   (a) Types and production of Cheese
   (b) Single Cell Proteins.

UNIT IV

7. Describe the food poisoning and food caused infections caused by Bacillu cereus and Vibriosis.

Or

8. Write notes on :
   (a) Yersiniosis
   (b) Sagellosis.

UNIT V

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

Or

10. Write notes on :
    (a) Food control Agencies and Acts.
    (b) Good manufacturing practices for preventive measures.

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Microbiology

Paper IV — INDUSTRIAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer FIVE, ONE question from each unit

UNIT I

1. Describe the production of Organic feed stocks, by fermentation process.

Or

2. Describe biosynthesis, regulation and strain development production of Tetracyclin.

UNIT II

3. Write an account on microbial production of Enzymes for industrial use.

Or

4. Describe the structure, biosynthesis, and production of Nucleotides.

UNIT III

5. Enumerate biosynthesis and production processes of Amino acids.

Or

6. Describe the nature, mechanism of synthesis and production of Fungal Polysaccharides.

UNIT IV

7. Write an account on the types of Bioconversions.

Or

8. Describe the transformation of antibiotics.

UNIT V

9. Write an account on the methods of enzyme immobilization.

Or

10. Describe the advantages of immobilized enzymes.