(MCB 40112)

M.Sc. DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Microbiology

Paper I — ENVIRONMENTAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ALL questions.

UNIT I

1. (a) Give an account on methods of detecting micropropagules.

Or

(b) Discuss the diseases caused by aeroallergens and their control.

UNIT II

2. (a) Describe the treatment of waters for drinking purpose. Add a note on Coliform test.

Or

(b) Write short notes on :

(i) Phytoplankton

(ii) BOD.

UNIT III

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

Or

(b) Write short notes on :

(i) Soil profile

(ii) Transformation of Iron in soil.

UNIT IV

4. (a) Explain the mechanism and significance of nitrification.

Or

(b) Write short notes on :

(i) Dinitrogen fixation

(ii) Denitrification.

UNIT V

5. (a) What is microbial leaching? Discuss the factors affecting leaching processes.

Or

(b) Explain the role of microorganisms in the production of biogas and Ethanol.

(MCB 40212)

M.Sc. DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Microbiology

Paper II — AGRICULTURAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on the microbial flora of Rhizosphere and their significance.

Or

2. Write short notes on :

(a) Soil fertility

(b) Soil fungistasis.

UNIT II

3. Explain the mechanism of biological nitrogen fixation.

Or

4. Write short notes on :

(a) Free living nitrogen fixing bacteria.

(b) N-fixing cyanobacteria.

UNIT III

5. What are Biopesticides? Give an account on the bacterial and fungal biopesticides.

Or

6. Write short notes on :

(a) VAM propagation

(b) Microbial degradation of pesticides.

UNIT IV

7. Discuss the etiology, symptoms, control and prevention of tikka disease of ground nut.

Or

8. Write short notes on :

(a) Smut disease of sorghum.

(b) Symptoms of fungal diseases.

UNIT V

9. Give an account on the general principles of plant disease control.

Or

10. Explain the chemical and biological control of plant diseases.

(MCB 40312)

M.Sc. DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Microbiology

Paper III — FOOD MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on factors affecting microbial activity in foods.

Or

2. Discuss the methods for the microbial examination of foods.

UNIT II

3. Explain the microbial spoilage of processed meats, poultry and fish.

Or

4. Write short notes on :

(a) Chemical preservation of foods.

(b) Canned foods.

UNIT III

5. Briefly discuss the various fermented milk products.

Or

6. Write short notes on :

(a) Non-alcoholic beverages.

(b) Single cell protein.

UNIT IV

7. Explain the food borne infections caused by Bacillus, salmonella and yersenia pestis.

Or

8. Write short notes on :

(a) Gastroenteritis.

(b) Paralytic shellfish poisoning.

UNIT V

9. What are good manufacturing practices. Add a note on Hazard analysis of critical control points.

Or

10. Write short notes on :

(a) Quality control.

(b) FDA.

(MCB 40412)

M.Sc. DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Microbiology

Paper IV — INDUSTRIAL MICROBIOLOGY

(Regulation 2012)

Time : Three hours Maximum : 70 marks

Answer ALL questions.

UNIT I

1. Give an account on the production of penicillin by fermentation. Add a note on recovery of semi-synthetic penicillins.

Or

2. Write short notes on :
   (a) Biosynthesis and regulation of streptomycin.
   (b) Alcohol fermentation.

UNIT II

3. Describe the structure, biosynthesis and production of Vit-B_{12}.

Or

4. Write short notes on :
   (a) Amylases.
   (b) Biosynthesis of Nucleosides.

UNIT III

5. Discuss the production of citric acid by fermentation in detail.

Or

6. Write short notes on :
   (a) Microbial strains employed in Amino acid production.
   (b) Yeast polysaccharides.

UNIT IV

7. What is bioconversion? Discuss the applications of bioconversion.

Or

8. Give an account on the transformation of antibiotics and non-steroid compounds.

UNIT V

9. Give an account on the immobilized cell systems and their applications.

Or

10. Write short notes on :
    (a) Matrices for enzymes.
    (b) Immobilized cell fermentations versus conventional fermentations.

———————