

M.Sc. (Final) DEGREE EXAMINATION, DECEMBER 2008.

Second Year

Microbiology

Paper V — MEDICAL MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE questions.

1. Complement.
2. Flora of gastrointestinal tract.
3. Escherichia coli.
4. Sporotrichosis.
5. Rabies.
6. New emerging viral diseases.
7. Antiviral drugs.
8. Types of epidemics.

PART B — (4 × 15 = 60 marks)

Answer All FOUR questions.

9. (a) Explain the significance of normal flora.
Or
(b) Write about the virulence of the pathogens.
10. (a) Write on opportunistic mycoses diseases.
Or
(b) Explain the diagnosis and control measures of clostridium tetani.
11. (a) Write on hepatitis viral disease in detail.
Or
(b) Write on the detail study of protozoan diseases.
12. (a) What is chemotherapy? Write on chemotherapy of bacterial diseases.
Or
(b) Write different serological methods used in diagnosis of viral infections.

Microbiology

Paper VI — IMMUNOLOGY AND CELLULAR MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE questions.

All questions carry equal marks.

1. Distinguish between humoral and cell mediated immunity.
2. Lymphokines.
3. Antibody dependent cytotoxicity.
4. Radio immunoassay.
5. Super antigens.
6. Secretion apparatus.
7. Extra cellular first messengers.
8. Chemotaxis.

PART B — (4 × 15 = 60 marks)

Answer FOUR of the following.

All questions carry equal marks.

9. (a) Discuss the structure and functions of major histocompatibility complex.
Or
(b) Describe the structures and functions of lymphoid cells.
10. (a) List out the components of the complement system. Describe two pathways of complement activation.
Or
(b) Explain the structures and functions of different classes of immunoglobulins.
11. (a) Discuss the types and functions of bacterial toxins.
Or
(b) Describe the secretion systems in microorganisms.
12. (a) How signals control sporulation in Myxococcus Xanthus?
Or
(b) How bacteria respond to external physical and chemical signals?

(DMB 23)

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Paper VII — MICROBIAL GENETICS AND MOLECULAR BIOLOGY

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

All questions carry equal marks.

1. Ti plasmid.
2. Transduction.
3. “Genetic code is degenerate” – Write the significance.
4. SOS repair.
5. Coupled transcription and translation.
6. Attachment of amino acid to tRNA.
7. Composite transposons.
8. Western blotting and its applications.

PART B — (4 × 15 = 60 marks)

Answer any FOUR of the following.

All questions carry equal marks.

9. (a) Explain the conjugational gene mapping in bacteria.
Or
(b) Write an account on genetic recombination in T4 phage.
10. (a) Write on mechanism of action of different chemical mutagens in mutating the DNA.
Or
(b) Explain different DNA repair mechanisms and their importance.
11. (a) Explain the translation process in prokaryotes and comment on the importance of extra ribosomal proteins involved in this process.
Or
(b) What is operon concept? Explain the repressible and attenuator regulation of Trp operon.
12. (a) Explain DNA finger printing and its significance.
Or
(b) Write on the concept of rDNA technology and its applications.

(DMB 24)

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Microbiology

Paper VIII — FOOD AND INDUSTRIAL MICROBIOLOGY

Time : Three hours

Maximum : 100 marks

PART A — (5 × 8 = 40 marks)

Answer any FIVE of the following.

All questions carry equal marks.

1. Microbial food contamination.
2. Write about the micro organisms associated with foods.
3. Discuss the microbes usually present in milk.
4. Write on the microbes used as food and their nutritional importance.
5. Give an account on different types of fermentors.
6. Describe the various components of a fermentor.
7. Elaborate on the economics of fermentation.
8. Discuss the advantages and disadvantages of continuous culture.

PART B — (4 × 15 = 60 marks)

Answer all FOUR questions.

All questions carry equal marks.

9. (a) Describe the different methods of food preservation and their advantages and disadvantages.

Or

- (b) Write an essay on the various methods of enumeration of micro organisms in the foods.

10. (a) What are the fermented foods? Describe the production of Sauerkraut and Cheddar Cheese.

Or

- (b) Discuss on the microbial quality testing of milk and add note on the importance of milk pasteurization.

11. (a) What are the different types of fermentors? Write about the aeration and agitation in the fermentation process.

Or

- (b) Explain the rDNA technology and its applications in the food and industrial microbiology.

12. (a) Give a detailed account of solid state fermentation process and discuss on its advantages and disadvantages.

Or

- (b) Describe methods of recovery and purification of fermentation products.
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