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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2024

PAPER I

Monday, June 10, 2024

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Draw diagrams wherever necessary

✍ Answer all the questions:

1. Discuss the different methods available for processing and sterilization of instruments used in the operation theatre. (15 marks)

2. Explain the importance of HLA typing in transplantation immunology. (15 marks)

3. **Write Short Notes on:**

3A. Bacterial conjugation

3B. Role of complement in health and disease

3C. Mechanism of Type I hypersensitivity reaction

3D. Toxins produced by bacteria

3E. Continuous bacterial cultures

3F. Methods and significance of antigen detection in infectious diseases

3G. Passive immunity

3H. Antigen presenting cells

3I. Fluorescence microscopy

3J. Gram negative bacterial cell wall

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2024

PAPER II

Tuesday, June 11, 2024

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Draw diagrams wherever necessary

✍ Answer all the questions:

✍ Long Essays:

1. Discuss the etiologies, pathogenesis and laboratory diagnosis of gas gangrene.

(15 marks)

2. List the agents of bacterial zoonoses. Describe the pathogenesis, laboratory diagnosis and treatment of Leptospirosis.

(15 marks)

3. **Write short notes on:**

3A. Multidrug resistant Salmonella.

3B. Pathogenesis and laboratory diagnosis of skin and soft tissue infections caused by Group A Streptococcus.

3C. Catheter associated UTI: Pathogenesis, Laboratory diagnosis

3D. Scrub typhus.

3E. Laboratory diagnosis of Gonorrhoea

3F. Newer diagnostic methods in Tuberculosis

3G. Halophilic vibrios

3H. Atypical pneumonia

3I. Etiologies and diagnosis of neonatal meningitis

3J. DPT vaccine

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2024

PAPER III

Wednesday, June 12, 2024

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Draw diagrams wherever necessary.**

✍ **Long Essays:**

1. Discuss etiopathogenesis and laboratory diagnosis of acute viral diarrhea. (15 marks)

2. Discuss protozoal infections of central nervous system. (15 marks)

3. **Write short notes on:**

3A. Seasonal influenza

3B. Alveolar hydatid disease

3C. Laboratory testing and interpretation of Hepatitis B virus infection

3D. Etiologies and laboratory diagnosis of viral conjunctivitis

3E. Urinary schistosomiasis

3F. Eumycetoma

3G. Mycotoxins

3H. Cryptococcal meningitis

3I. LD bodies

3J. Dengue hemorrhagic fever

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2024

PAPER IV

Thursday, June 13, 2024

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Draw diagrams wherever necessary.

✍ Long Essays:

1. Discuss in detail Quality control in the Diagnostic Microbiology Laboratory.

(15 marks)

2. Outline the steps involved in the investigation of outbreak of Gram negative bacterial sepsis in neonatal Intensive care unit.

(15 marks)

3. Write Short Notes on:

3A. Monoclonal antibodies

3B. Nonculture methods in the diagnosis of fungal infections

3C. Antibiotic stewardship

3D. Newer epidemiological typing methods

3E. Melioidosis

3F. Air sampling methods in Operation theatre

3G. Biomedical waste management

3H. DNA Microarray and its applications

3I. Zika virus

3J. Coccidian parasitic infections in AIDS patients

(7 marks × 10 = 70 marks)

