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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2020
SUBJECT: PAPER I: GENERAL MICROBIOLOGY AND IMMUNOLOGY

Wednesday, June 03, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

1. Discuss Recombinant DNA technology with its applications in microbiology. (15 marks)

2. Describe the mechanisms of processing of antigen and presentation of antigen to immunocompetent cells. (15 marks)

3. **Write short notes on:**
 - 3A. Bacterial virulence factors
 - 3B. Bacterial filters
 - 3C. IMViC reaction
 - 3D. Dark field microscope
 - 3E. ELISA
 - 3F. Outline the classical pathway of complement activation
 - 3G. Bacterial growth curve
 - 3H. Phage typing
 - 3I. Describe the types, principle and uses of latex agglutination tests
 - 3J. Mechanism and types of Anaphylaxis

(7 marks × 10 = 70 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2020
SUBJECT: PAPER II: BACTERIOLOGY AND MYCOLOGY

Thursday, June 04, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

1. Discuss the pathogenesis and laboratory diagnosis of Cholera. (15 marks)

2. Discuss the laboratory diagnosis and prophylaxis of Enteric fever. (15 marks)

3. **Write short notes on:**
 - 3A. Atypical pneumonia
 - 3B. Weil Felix test
 - 3C. Group B streptococci
 - 3D. Specific tests for diagnosis of syphilis
 - 3E. *Clostridium difficile*
 - 3F. Zygomycosis
 - 3G. *Histoplasma capsulatum*
 - 3H. Laboratory diagnosis of Dermatophytes
 - 3I. Rhinosporidiosis
 - 3J. Laboratory diagnosis of infection caused by *Cryptococcus neoformans* (7 marks × 10 = 70 marks)



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MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2020
SUBJECT: PAPER III: VIROLOGY AND PARASITOLOGY

Friday, June 05, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

1. Enumerate the arboviruses seen in India. Describe the pathogenesis and laboratory diagnosis of dengue fever and its complications.

(15 marks)

2. Enumerate tissue nematodes. Describe the life cycle, pathogenesis, clinical features and laboratory diagnosis of *Wuchereria bancrofti* infection.

(15 marks)

3. **Write short notes on:**

3A. Viral interference

3B. Cytomegalic inclusion disease

3C. Immunoprophylaxis of viral hepatitis

3D. Molluscum contagiosum

3E. Congenital viral infections

3F. Opportunistic infections associated with AIDS

3G. Congenital toxoplasmosis

3H. *Balantidium coli*

3I. Cryptosporidiosis

3J. NIH swab

(7 marks × 10 = 70 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
MD (MICROBIOLOGY) DEGREE EXAMINATION – JUNE 2020
SUBJECT: PAPER IV: APPLIED MICROBIOLOGY & RECENT ADVANCES

Saturday, June 06, 2020

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

1. Discuss Nosocomial infections. Write a note on the role of Hospital Associated Infection Control Committee (HAICC).

(15 marks)

2. Write in detail about Bioterrorism.

(15 marks)

3. Short notes on:

3A. T cell independent and T cell dependent antigens

3B. *Legionella pneumophila*

3C. *Acinetobacter* spp

3D. Human parvovirus B19

3E. *Candida* spps other than *Candida albicans*

3F. Immunofluorescence

3G. Occult Hepatitis

3H. *Campylobacter jejuni*

3I. *Malassezia furfur*

3J. Real time PCR

(7 marks × 10 = 70 marks)

