

**MANIPAL UNIVERSITY****MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2014****SUBJECT: PAPER I: GENERAL MICROBIOLOGY AND IMMUNOLOGY**

Tuesday, April 01, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL questions.**
- ✍ **Write answers that are brief, clear, relevant and legible.**
- ✍ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**

✍ **Long Essays.**

1. Discuss the principle and variants of ELISA. Add a note on quality assurance of ELISA testing.

(15 marks)

2. Discuss antimicrobial resistance mechanisms in Gram positive bacteria. Write briefly on testing and interpretation of common resistance phenotypes in them.

(15 marks)

3. **Write short notes on :**

- 3A. Use of glutaraldehyde in hospital disinfection
- 3B. Virulence determinants in bacteria causing intestinal infections
- 3C. Gram negative bacterial cell wall
- 3D. Long term preservation of bacteria
- 3E. Comment on the role of spleen in immune system
- 3F. Discuss different antigen processing and presentation pathways
- 3G. Systemic and local diseases of type 1 hypersensitivity
- 3H. Dark field microscopy
- 3I. Biological effects of complement
- 3J. HLA typing

(7×10 = 70 marks)



## MANIPAL UNIVERSITY

## MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2014

## SUBJECT: PAPER II: BACTERIOLOGY AND MYCOLOGY

Wednesday, April 02, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions

✍ Long Essays.

1. What is MDR and XDR tuberculosis? Write briefly the pathogenesis of drug resistance in M. tuberculosis. Describe newer techniques to detect the drug resistance in the laboratory.  
(4+6+5 = 15 marks)

2. Describe fungal pathogens affecting human lung. Describe briefly the sample collection and processing in the laboratory for different fungal pathogens.  
(15 marks)

3. Write short notes on:

3A. Listeriosis

3B. Vector Borne Bacterial diseases

3C. Dematiaceous fungus

3D. Onychomycosis

3E. Trench fever

3F. Pneumococcal vaccines

3G. *Clostridium difficile* infection

3H. Fungal stains

3I. *Erysipelothrix rhusiopathiae*

3J. TWAR agent

(7×10 = 70 marks)



## MANIPAL UNIVERSITY

## MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2014

## SUBJECT: PAPER III: VIROLOGY AND PARASITOLOGY

Thursday, April 03, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ **Answer ALL questions.**
- ✍ **Write answers that are brief, clear, relevant and legible.**
- ✍ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**

✍ **Long Essays.**

1. Discuss etiopathogenesis and laboratory diagnosis of acute viral lower respiratory tract infections in children.

(15 marks)

2. Give an overview of geohelminthic infections with emphasis on laboratory testing. Add a note on strategies of antihelminthic therapy.

(15 marks)

3. **Write short notes on :**

- 3A. Herpes simplex virus encephalitis
- 3B. Recrudescence malaria
- ~~3C. Laboratory testing and interpretation of Hepatitis C virus infection~~
- 3D. Etiologies and laboratory diagnosis of viral conjunctivitis
- 3E. Pathogenesis and laboratory diagnosis of giardiasis
- 3F. Etiopathogenesis and laboratory diagnosis of oriental sore
- 3G. Congenital toxoplasmosis
- 3H. Teratogenic viruses
- 3I. LD bodies
- 3J. Rotavirus diarrhea

(7×10 = 70 marks)



## MANIPAL UNIVERSITY

MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER IV: APPLIED MICROBIOLOGY &amp; RECENT ADVANCES

Friday, April 04, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL questions

✍ Long Essays.

1. Laboratory testing and interpretation for infections with a potential for vertical transmission in a pregnant woman.

(15 marks)

2. Write briefly on etiopathogenesis, epidemiology and management of Non-typhoidal salmonellosis.

(15 marks)

3. Write short notes on:

3A. Microbiological investigations of genital ulcers

3B. Risk of infections and prophylaxis in splenectomized patients

3C. Infections in contact lens wearers

3D. Markers of sepsis diagnosis

3E. Measures to control *Clostridium difficile* infections in the hospital

3F. Recent advances in yeast identification

3G. Chemiluminescence: Principle and applications in diagnostic microbiology

3H. Quality control in antimicrobial susceptibility testing

3I. Discuss beneficial role of normal flora in the gut

3J. Transfusion malaria

(7×10 = 70 marks)

