Reg. No.										

MANIPAL UNIVERSITY

MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2016

SUBJECT: PAPER I: GENERAL MICROBIOLOGY AND IMMUNOLOGY

Monday, April 18, 2016

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long Essays:**

1. Discuss disinfectants used in hospitals. Write briefly on methods of testing efficacy of disinfectants.

(15 marks)

2. Discuss mechanisms of B cell activation and differentiation. Add a note on class switching.

(15 marks)

3. **Write short notes on:**

3A. Microbiological quality of air in operation theaters
3B. Good laboratory practices
3C. Quality control of in-house prepared culture media
3D. Biological functions of cytokines
3E. Mechanism of type III hypersensitivity and resulting clinical conditions
3F. Discuss mechanisms for induction of autoimmunity
3G. Immunomodulators
3H. Principle and applications of immunofluorescence
3I. Phase contrast microscopy
3J. Transport of specimen for anaerobic culture

(7 marks × 10 = 70 marks)

Reg. No.										

MANIPAL UNIVERSITY

MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2016

SUBJECT: PAPER II: BACTERIOLOGY AND MYCOLOGY

Tuesday, April 19, 2016

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. A 50 year old man presented to emergency with fever and leg pain following trauma to lower limb. He was hypotensive, had violaceous rash and subcutaneous emphysema in both legs. Soon symptoms spread to abdominal wall.

   Discuss etiopathogenesis, laboratory diagnosis and management of the disease.

   (15 marks)

2. Discuss mycotic infections of skin and appendages. Write briefly on treatment.

   (15 marks)

3. **Write short notes on:**

3A. Typing of Salmonella
3B. Pathogenesis of Candida infection
3C. Pneumococcal conjugate vaccines
3D. VISA
3E. Blood culture in the diagnosis of infective endocarditis
3F. Chlamydial infections in neonates
3G. Antifungal susceptibility testing for filamentous fungi
3H. Penicilliosis marnefei
3I. Serological tests for rickettsial diseases
3J. Rhinocerebral zygomycosis

(7 marks × 10 = 70 marks)

Reg. No.										

MANIPAL UNIVERSITY

MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2016

SUBJECT: PAPER III: VIROLOGY AND PARASITOLOGY

Wednesday, April 20, 2016

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long Essays:**

1. Discuss pathogenesis and laboratory diagnosis of lymphatic filariasis. Add a note on principles and practice of mass drug administration in India.

(15 marks)

2. Discuss virology, epidemiology and laboratory testing of flaviviral infections in India.

(15 marks)

3. **Write short notes on:**

3A. Laboratory diagnosis of cytomegalovirus infection and treatment
3B. Pathogenesis and immunity to measles
3C. Western blot testing for diagnosis of HIV infection
3D. Drug resistance in malarial parasites
3E. Endemic hematuria: Etiopathogenesis and laboratory diagnosis
3F. Write laboratory diagnosis of chronic diarrhea of suspected parasitic etiology
3G. Seasonal influenza
3H. Trichinosis
3I. Killed polio vaccines
3J. Babesiosis

(7 marks × 10 = 70 marks)

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MANIPAL UNIVERSITY

MD (MICROBIOLOGY) DEGREE EXAMINATION – APRIL 2016

SUBJECT: PAPER IV: APPLIED MICROBIOLOGY & RECENT ADVANCES

Thursday, April 21, 2016

Time: 14:00 – 17:00 Hrs. Max. Marks: 100

- **Answer ALL the questions.**
- **Draw diagrams wherever necessary.**

Long Essays:

1. Describe the categorization of pathogens according to biohazard groups and containment levels. Add a note on biosafety cabinets, their types and uses.

(15 marks)

2. Enumerate the deep mycoses. Describe the pathogenesis and laboratory diagnosis of histoplasmosis.

(15 marks)

3. **Write short notes on:**

3A. Prions and prion diseases
3B. Microfilariae in diagnosis of lymphatic filariasis
3C. Occult hepatitis B infection
3D. Bacterial vaginosis
3E. HLA typing methods
3F. HACEK group
3G. Primary amoebic meningoencephalitis
3H. Interferons
3I. Detection of MDR-TB
3J. Viral shell culture

(7 marks × 10 = 70 marks)