Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: GENERAL MICROBIOLOGY
(MICROBIOLOGY SPECIALIZATION)

Wednesday, June 01, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

✍ **Answer the following questions with the help of neat labeled diagrams wherever necessary.**

1. Classify Sterilization. Discuss the working principle of an autoclave and add a note on the sterilization control.

(4+7+4 = 15 marks)

2. Explain the mechanisms of gene transfer in bacteria.

(15 marks)

3. **Write briefly on:**

3A. Bacteriological analysis of drinking water
3B. Bacterial cell wall
3C. Anaerobiosis
3D. Processing of clinical sample for diagnosis of enteric pathogens
3E. Electron microscopy

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Enrichment media
4B. Triple sugar iron agar
4C. Louis Pasteur contributions to Microbiology
4D. Bacterial growth curve
4E. Preservation of microorganisms in the laboratory

(3 marks × 5 = 15 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: CLINICAL BIOCHEMISTRY
(BIOCHEMISTRY SPECIALIZATION)

Wednesday, June 01, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

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

1. Define and classify diabetes mellitus. Discuss the various metabolic changes in diabetes mellitus. Add a note on glycated hemoglobin.

(15 marks)

2. Define buffer. What are the various buffer systems of blood? Discuss their role in pH regulation.

(15 marks)

3. **Write detailed notes on:**

3A. Continuous flow analyzers
3B. Clearance tests for renal glomerular function
3C. Differential diagnosis of jaundice
3D. Hypothyroidism and its diagnosis
3E. Urinalysis for sugar and ketone bodies

(5 marks × 5 = 25 marks)

4. **Write brief notes on:**

4A. Immediate management of accidents from acids
4B. Disposal of infectious waste
4C. Material safety data sheet
4D. Tests for H-pylori
4E. ATP synthesis

(3 marks × 5 = 15 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: SYSTEMATIC BACTERIOLOGY AND MYCOLOGY
(MICROBIOLOGY SPECIALIZATION)

Friday, June 03, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

✍ **Answer the following questions with the help of neat labeled diagrams wherever necessary.**

1. Explain the pathogenesis and laboratory diagnosis of Mycobacterium tuberculosis infection. Add a note on its immunoprophylaxis.

(5+8+2 = 15 marks)

2. Classify dermatophytes. Explain the clinical manifestations and laboratory diagnosis of dermatophytosis.

(4+4+7 = 15 marks)

3. **Write briefly on:**

3A. Pathogenesis of histoplasmosis
3B. Virulence factors of Staphylococcus aureus
3C. Classification of the genus Salmonella
3D. Pathogenesis of gas gangrene
3E. Laboratory diagnosis of chlamydial infections

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Mycotoxicosis
4B. Elek's test
4C. Pathogenesis of ETEC
4D. Etio-pathogenesis of eumycetoma
4E. Pathogenesis of H.pylori

(3 marks × 5 = 15 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: METABOLIC REGULATIONS AND INBORN ERRORS OF METABOLISM
(BIOCHEMISTRY SPECIALIZATION)

Friday, June 03, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

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

1. Discuss transamination and deamination. Add a note on toxicity of ammonia.

(15 marks)

2. Define and classify hormones. Discuss mechanism of action of hormones.

(15 marks)

3. **Write detailed notes on:**

3A. Glycogenesis
3B. Metabolism of LDL
3C. Isoenzymes
3D. Regulation and energetics of citric acid cycle
3E. Degradation of tyrosine

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Disorders of copper metabolism
4B. Biochemical functions of zinc
4C. Hemosiderosis
4D. Disease states of sodium
4E. Alkaptonuria

(3 marks × 5 = 15 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: APPLIED BIOCHEMISTRY
(BIOCHEMISTRY SPECIALIZATION)

Monday, June 06, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

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

1. Describe the toxicology of various drugs of abuse.

(15 marks)

2. Discuss the biochemistry of ageing. Add a note on prions.

(15 marks)

3. **Write short notes on:**

3A. C-reactive protein
3B. Alpha-feto protein
3C. Sodium imbalance
3D. Biochemical changes during HIV infection
3E. Antihistamines

(5 marks × 5 = 25 marks)

4. **Write brief notes on:**

4A. Beta amyloid
4B. Nicotine
4C. Alzheimer's disease
4D. Cocaine
4E. Respiratory acidosis

(3 marks × 5 = 15 marks)

Reg. No.										

MANIPAL UNIVERSITY

SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: VIROLOGY AND PARASITOLOGY
(MICROBIOLOGY SPECIALIZATION)

Monday, June 06, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

✍ **Answer the following questions with the help of neat labeled diagrams wherever necessary.**

1. Discuss the pathogenesis, clinical features and complications of falciparum malaria. Explain its laboratory diagnosis.

(10+5 = 15 marks)

2. With the help of a graph describe the serodiagnosis of Hepatitis B viral infection. Explain its prophylaxis.

(12+3 = 15 marks)

3. **Write briefly on:**

3A. Prophylaxis of rabies
3B. Structure of influenza virus
3C. Life cycle of Taenia solium
3D. Pathogenesis of Human papilloma virus
3E. Laboratory diagnosis of filariasis

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Laboratory diagnosis of Isospora belli infection
4B. Primary amoebic meningo encephalitis
4C. Pathogenesis of rubella
4D. Laboratory diagnosis of infectious mononucleosis
4E. Entero test

(3 marks × 5 = 15 marks)