

MANIPAL UNIVERSITY
SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015
SUBJECT: GENERAL MICROBIOLOGY
(MICROBIOLOGY SPECIALIZATION)

Monday, June 01, 2015

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 sterilization methods employed with an example of articles sterilized for each. Discuss the working principle and applications of autoclave.

(5+10 = 15 marks)

2. Discuss the various epidemiological typing methods adopted for investigation of infectious disease outbreak.

(15 marks)

3. Write briefly on:

3A. Bacterial cell wall

3B. Antibiotic susceptibility testing

3C. Gene transfer within the bacterial cell

3D. IMViC reactions

3E. Biological waste management

(5 marks × 5 = 25 marks)

4. Write short notes on:

4A. Negative staining

4B. Fluorescent microscope

4C. Contributions of Louis Pasteur

4D. Bacterial growth curve

4E. Normal flora of human beings

(3 marks × 5 = 15 marks)

MANIPAL UNIVERSITY
SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: CLINICAL BIOCHEMISTRY
(BIOCHEMISTRY SPECIALIZATION)

Monday, June 01, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ **Answer ALL questions.**

✍ **Draw diagrams wherever necessary.**

1. Define buffer. Discuss the regulation of blood pH. Add a note on arterial blood gases.
(15 marks)

2. What are the chemical constituents of urine? Discuss the urinalysis for abnormal chemical constituents.
(15 marks)

3. **Write detailed notes on:**
 - 3A. Methods of estimation and significance of blood glucose
 - 3B. Control charts for analytical methods
 - 3C. Tests for role of liver in bilirubin metabolism
 - 3D. First aid management of accidents in the laboratory
 - 3E. Tests for renal tubular function

(5 marks × 5 = 25 marks)

4. **Write brief notes on:**
 - 4A. Non-invasive tests for pancreatic exocrine function
 - 4B. Estimation of free acidity
 - 4C. Handling and disposal of chemical waste
 - 4D. Serum thyroxin
 - 4E. Continuous flow analyzer

(3 marks × 5 = 15 marks)



MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015

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

Wednesday, June 03, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ **Answer ALL questions.**

✍ **Draw diagrams wherever necessary.**

1. Name fat soluble vitamins. Discuss vitamin A with biochemical functions and deficiency.
(15 marks)
2. Name major metabolic pathways which regulate blood glucose level. Discuss glycogenolysis and glycogenesis.
(15 marks)

3. **Write detailed notes on:**

- 3A. Theories to explain mechanism of enzyme action
- 3B. Calcium homeostasis
- 3C. Hyper lipoproteinemia and atherosclerosis
- 3D. Abnormalities of thyroid function
- 3E. Transamination and deamination

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

- 4A. Phenylketonuria
- 4B. Wilson's disease
- 4C. Beriberi
- 4D. Salvage pathway of purines
- 4E. Gout

(3 marks × 5 = 15 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: SYSTEMATIC BACTERIOLOGY AND MYCOLOGY
(MICROBIOLOGY SPECIALIZATION)

Wednesday, June 03, 2015

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 etiopathogenesis, clinical features and laboratory diagnosis of diphtheria. Add a note on its prevention.

(15 marks)

2. Discuss deep mycoses with special reference to *Histoplasma capsulatum*.

(15 marks)

3. Write briefly on:

3A. Laboratory diagnosis of anthrax

3B. VDRL test

3C. Laboratory diagnosis of leptospirosis

3D. Mycotoxicoses

3E. *Cryptococcus neoformans*

(5 marks × 5 = 25 marks)

4. Write short notes on:

4A. Laboratory diagnosis of EHEC

4B. Halophilic vibrios

4C. Methods to inhibit swarming in proteus

4D. Germ tube test

4E. Laboratory diagnosis of mucormycoses

(3 marks × 5 = 15 marks)



MANIPAL UNIVERSITY**SECOND YEAR M. Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015****SUBJECT: VIROLOGY AND PARASITOLOGY
(MICROBIOLOGY SPECIALIZATION)**

Friday, June 05, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

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

1. Describe the morphology, pathogenecity, laboratory diagnosis and prophylaxis of Hepatitis A virus.

(3+5+4+3 = 15 marks)

2. Describe the life cycle of malarial parasite in the intermediate host. Discuss the laboratory diagnosis of malaria.

(7+8 = 15 marks)

3. **Write briefly on:**

3A. Genital herpes

3B. Adenovirus

3C. Western blot

3D. Life cycle of *Wuchereria bancrofti*

3E. *Onchocerca volvulus*

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Corona virus

4B. Laboratory diagnosis of RSV

4C. *Trichinella spiralis*

4D. *Fasciola hepatica*

4E. Entero test

(3 marks × 5 = 15 marks)



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MANIPAL UNIVERSITY

SECOND YEAR M.Sc. M.L.T. DEGREE EXAMINATION – JUNE 2015

SUBJECT: APPLIED BIOCHEMISTRY
(BIOCHEMISTRY SPECIALIZATION)

Friday, June 05, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ **Answer ALL questions.**

✍ **Draw diagrams wherever necessary.**

1. Elaborate on prions and give an account of prion disease.

(15 marks)

2. Discuss agrochemical poisoning.

(15 marks)

3. **Write detailed notes on:**

3A. Laboratory diagnosis of sickle cell anaemia

3B. C- reactive proteins

3C. Barbiturates

3D. DDT

3E. Ceruloplasmin

(5 marks × 5 = 25 marks)

4. **Write short notes on:**

4A. Antimalarials

4B. Phosphate buffer

4C. Cadmium

4D. HbF

4E. Respiratory acidosis

(3 marks × 5 = 15 marks)

