

MANIPAL ACADEMY OF HIGHER EDUCATION

**FIRST SEMESTER M.Sc. MEDICAL (ANATOMY, PHYSIOLOGY, BIOCHEMISTRY,
PHARMACOLOGY, MICROBIOLOGY) DEGREE EXAMINATION – FEBRUARY 2022**

SUBJECT: BASIC SCIENCES – COMMON CORE 1 (MCC 601)

Monday, February 21, 2022

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

- ✗ Answer Section “A”, Section “B” and Section “C” in THREE separate answer books.
- ✗ All questions are compulsory.
- ✗ Illustrate your answers with neatly drawn and correctly labeled diagrams wherever necessary.

SECTION “A” (ANATOMY) : 20 MARKS

1. Name the parts of the gastro intestinal tract. Describe the stomach in detail.
(4+6 = 10 marks)
2. Write briefly on:
 - 2A. Types of epithelium
 - 2B. Spinal cord

(5 marks × 2 = 10 marks)

SECTION “B” (PHYSIOLOGY) : 15 MARKS

- 1A. With the help of diagram enumerate the stages of erythropoiesis.
- 1B. Give the cause and any two features of cretinism.
- 1C. Name the different types of neuroglia.
(2+(1+1)+1 = 5 marks)
- 2A. List any four functions of saliva.
- 2B. What is Myopia? How it can be corrected?
- 2C. Give the cause and any two symptoms of Parkinsonism.
(1+2+2 = 5 marks)
- 3A. Name any four properties of cardiac muscle.
- 3B. List any two factors needed for spermatogenesis.
- 3C. Define Glomerular Filtration Rate (GFR). Give its normal value.
(2+1+(1+1) = 5 marks)

SECTION “C” (BIOCHEMISTRY) : 15 MARKS

1. Explain competitive and non-competitive types of enzyme inhibitions with examples.
(5 marks)
2. Classify lipoproteins and write their functions. Name any two special products formed from cholesterol.
(4+1 = 5 marks)
3. Describe the structure of starch and glycogen. Write two functions of mucopolysaccharides.
(4+1 = 5 marks)



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FIRST SEMESTER M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION – FEBRUARY 2022

SUBJECT: CARBOHYDRATES AND PROTEIN – CHEMISTRY AND METABOLISM (MBC 603)

Tuesday, February 22, 2022

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long answer questions:

1. Discuss the metabolism of tyrosine under the following headings: Catabolism, biologically important products formed and associated inborn errors.

(7+3 = 10 marks)

2. Describe hexose monophosphate shunt and its metabolic significance.

(10 marks)

3. Write a note on:

3A. Acute phase proteins

3B. Gluconeogenesis from lactate

3C. Proteoglycans

3D. Cathepsins

3E. Transamination and deamination

3F. Biologically important peptides

(5 marks × 6 = 30 marks)



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FIRST SEMESTER M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION – FEBRUARY 2022

SUBJECT: GENERAL TECHNIQUES AND ENZYMES (MBC 605)

Wednesday, February 23, 2022

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long answer questions:

1. Explain the cell fractionation technique with markers for each fraction.

(10 marks)

2. Explain the factors affecting enzyme activity. Add a note on regulation of enzyme activity.

(4+6 = 10 marks)

3. Write briefly on:

3A. RIA

3B. Ion selective electrodes

3C. High performance liquid chromatography

3D. Multi enzyme complex

3E. Agar gel electrophoresis

3F. Principle and application of spectrophotometry

(5 marks × 6 = 30 marks)

