

MANIPAL ACADEMY OF HIGHER EDUCATION**FIRST SEMESTER M.Sc. MEDICAL (ANATOMY, PHYSIOLOGY, BIOCHEMISTRY,
PHARMACOLOGY, MICROBIOLOGY) DEGREE EXAMINATION – MARCH 2021****SUBJECT: BASIC SCIENCES – COMMON CORE 1 (MCC 601)**

Monday, March 22, 2021

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 diagrams wherever appropriate.

SECTION “A” (ANATOMY) : 20 MARKS

1. Enumerate the parts of urinary system. Describe the kidney in detail. (10 marks)
2. Write short notes on:
 - 2A. Collateral circulation
 - 2B. Cartilaginous joints(5 marks × 2 = 10 marks)

SECTION “B” (PHYSIOLOGY) : 15 MARKS

- 1A. Draw a labelled diagram of reflex arc. Classify reflexes.
- 1B. Name the refractory errors of eye. (3+2 = 5 marks)
- 2A. Draw a labelled diagram of limb lead II ECG recording. Give the cause for each wave.
- 2B. Give the normal WBC count. Name different types of WBCs. (3+2 = 5 marks)
- 3A. Give the normal value of total plasma calcium level in blood. Name the hormones involved in calcium homeostasis.
- 3B. Name the primary and accessory muscles of inspiration. (3+2 = 5 marks)

SECTION “C” (BIOCHEMISTRY) : 15 MARKS

1. Describe the structure of immunoglobulins. Name the different classes of immunoglobulins and their functions.
2. What are enzymes? Describe the factors affecting the velocity of an enzyme catalyzed reaction.
3. Describe the functions and deficiency symptoms of vitamin D. (5 marks × 3 = 15 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION
FIRST SEMESTER M.Sc. (MEDICAL PHYSIOLOGY) DEGREE EXAMINATION –
MARCH 2021

SUBJECT: BLOOD (MPY 603)

Tuesday, March 23, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

1. Describe in detail the functions of platelets. Name the tests to assess platelet function. Add a note on thrombocytopenic purpura.
(5+2+3 = 10 marks)
2. Define erythropoiesis. With the help of a neat labelled diagram explain the changes that occur during erythropoiesis. Add a note on factors regulating erythropoiesis.
(1+4+5 = 10 marks)
3. **Write short notes on:**
 - 3A. Define anemia. Classify them. Give an example for each.
(5 marks)
 - 3B. List the plasma proteins. Enumerate their functions.
(5 marks)
 - 3C. Explain the steps of phagocytosis.
(5 marks)
 - 3D. What is jaundice? Mention the types and give **two** differentiating features between them with physiological basis.
(1+2+2 = 5 marks)
 - 3E. Name **two** different blood group systems. What is Landsteiner's law? Explain erythroblastosis fetalis.
(1+2+2 = 5 marks)
 - 3F. Define anticoagulants. Give **two** examples. Explain the mechanism of action of any **one**.
(1+2+2 = 5 marks)



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MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST SEMESTER M.Sc. (MEDICAL PHYSIOLOGY) DEGREE EXAMINATION – MARCH 2021

SUBJECT: GENERAL PHYSIOLOGY & MN (MPY 605)

Wednesday, March 24, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

1. Explain the different transport mechanisms across the cell membrane. (10 marks)
2. Explain excitation contraction coupling in skeletal muscle. (10 marks)
3. Write briefly on:
 - 3A. Refractory period in excitable tissue
 - 3B. Genesis of resting membrane potential
 - 3C. Wallerian degeneration
 - 3D. Neuromuscular blockers
 - 3E. Length tension relationship in skeletal muscle
 - 3F. Properties of smooth muscle(5 marks × 6 = 30 marks)

