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## MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER M.Sc. (MEDICAL BIOCHEMISTRY) DEGREE EXAMINATION – JANUARY 2021

SUBJECT: ENDOCRINOLOGY, IMMUNOLOGY, HEME METABOLISM (MBC 701)

Monday, January 25, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Essay questions:

1. Define Jaundice. Discuss the various biochemical tests to differentiate the types of Jaundice.  
(10 marks)

2. Discuss the action of Insulin on the metabolism of carbohydrates, proteins and lipids.  
(10 marks)

3. Write short notes on the following:

3A. Phase II reactions of detoxification with five examples

3B. G-proteins

3C. Glycated hemoglobin

3D. Sickle cell anemia

3E. B-lymphocytes

3F. Adrenal function tests

(5 marks × 6 = 30 marks)



**MANIPAL ACADEMY OF HIGHER EDUCATION**  
**THIRD SEMESTER M.Sc. (MEDICAL BIOCHEMISTRY)**  
**DEGREE EXAMINATION – JANUARY 2021**

**SUBJECT: CLINICAL BIOCHEMISTRY AND LABORATORY MANAGEMENT (MBC 703)**

Wednesday, January 27, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. Explain the following:

1A. Westgard multi rules

1B. Automation in pre analytic phase

(5+5 = 10 marks)

2. Describe the biochemical investigations to evaluate the liver functions and tubular functions of kidneys.

(6+4 = 10 marks)

3. **Write a note on:**

3A. Discuss the composition of CSF and clinical utility of it

(5 marks)

3B. Explain biomedical waste management

(5 marks)

3C. Explain the tests used for diagnosis and confirmation of HIV

(5 marks)

3D. A 38-year-old man known type I diabetes mellitus was brought to emergency department with altered sensorium. His ABG report showed, pH- 7.14, pO<sub>2</sub> – 89 mmHg, pCO<sub>2</sub>-35 mmHg, HCO<sub>3</sub><sup>-</sup> = 15 mEq/L, Sodium = 135 mEq/L, Potassium = 4 mEq/L and Chloride = 101mEq/L.

i) Interpret the lab data and suggest the acid base disorder

ii) Classify the acid base disorders based on anion gap with examples

iii) Calculate anion gap in the above-mentioned case

(1+2+2 = 5 marks)

3E. Describe the role of any THREE enzymes in diagnosis of myocardial infarction.

(5 marks)

3F. Explain the IEM panel tests for the screening of mucopolysaccharodosis.

(5 marks)

