Question Paper

Exam Date & Time: 31-Dec-2020 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST BDS DEGREE EXAMINATION - DECEMBER 2020/JANUARY 2021 SUBJECT: GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Marks: 60 **Duration: 160 mins.**

SECTION A: GENERAL HUMAN PHYSIOLOGY (30 MARKS)

Long essay

1A) Define hemostasis. List the major steps of hemostasis. Add a note on the role of platelets in temporary hemostatic plug formation.

(1+2+2 = 5 marks)

1B) Give the cause and features of erythroblastosis fetalis. Explain how this condition can be prevented and treated.

(3+2 = 5 marks)

Short essay:

2A) Draw a neat labelled diagram of Lead II ECG tracing. Identify and give the significance of various ECG waves, segments and intervals.

(2+2 = 4 marks)

2B) Explain the actions of cortisol on intermediary metabolism. Draw a schematic diagram outlining the feedback regulation of cortisol secretion.

(2+2 = 4 marks)

2C) Draw a labelled diagram of oxygen-hemoglobin dissociation curve. Add a note on Bohr effect and its significance.

(2+2 = 4 marks)

2D) Describe the mechanism of reabsorption of glucose from renal tubules. Add a note on renal threshold for glucose.

(2+2 = 4 marks)

2E) Name the ascending pathways in the spinal cord. Describe Brown-Sequard's syndrome.

(2+2 = 4 marks)

SECTION B: BIOCHEMISTRY (30MARKS)

3. **Essay questions:**

3A) Describe the process of glycolysis. Explain how many molecules of ATP are formed in anaerobic and aerobic conditions.

(4+1 = 5 marks)

3B Discuss the formation and disposal of bilirubin in the body (5)

4. Write briefly on following questions

4A) Outline the pathway of ketogenesis. Write the biochemical basis for diabetic ketoacidosis (3)

4B) Explain the mechanism of action of peptide hormones (3)

4C) Sketch the components of electron transport chain along with their inhibitors (3)

4D) What is anion-gap? Mention two conditions where it is elevated (3)

Answer the following questions

5A)	What is Gout? Discuss the biochemical mechanism involved in its treatment	(2)
5B)	Explain the structure of tRNA with labeled diagram	(2)
5C)	Discuss the causes and clinical features of Kwashiorkar	(2)
5D)	Differences between DNA and RNA structure	(2)