

M.Sc. (M.L.T.) Biochemistry

(BF/2023/12)

General physiology, acid base balance and organ function test**[Paper-III]****Time: 3 Hours****Max Marks: 80**

- Note:** 1. **Section A and B:- Question No. 1&2 are Compulsory and attempt any four question out of Question No. 3,4,5,6,7**
2. ***ATTEMPT BOTH PARTS IN SINGLE ANSWER BOOK ONLY.***
3. ***NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/PROVIDED***
4. ***The Student must write Q.P. Code in the space provided on the Title Page of the Answer Book.***

Section-A

- Q. 1. What is the significance of H^+ ion concentration in biological systems? Explain the role of buffer systems in the haemostatis of H^+ ion concentration [10]
- Q. 2. Discuss the following: a. Surface tension and its importance [5]
b. Sliding model of muscle contraction. Give source/s of energy for contraction [5]
- Q. 3. Explain the following briefly: a. Mechanism of clot formation (diagrammatically). [3]
b. Properties of water that make it a universal solvent. [2]
- Q. 4. Write short notes on: a. Significance of sigmoidal and hyperbolic oxygen dissociation curves. [3]
b. Bohr effect [2]
- Q. 5. Answer the following: a. Define pH and describe lab methods to measure it. [3]
b. Role of radioisotopes in disease [2]
- Q. 6. Write notes on: a. Urinary buffers [3]
b. Preparation of high purity water for advanced instruments [2]
- Q. 7. Discuss briefly the following: a. Diagnostic enzymes in hepatic disease. [3]
b. Vitamin K dependent reactions during clot formation [2]

Section-B

- Q. 1. Explain the disorders associated with acid base balance and the corresponding compensatory mechanisms? [10]
- Q. 2. Discuss the following: a. Conversion of protooncogenes to oncogenes [5]
b. Osmosis and its physiological importance. [5]
- Q. 3. Explain the following: a. Role of Mono-oxygenases in detoxification process [3]
b. A drug tolerated by one person may be harmful to other [2]
- Q. 4. Write short notes on: a. Neonatal jaundice [3]
b. Urea clearance [2]
- Q. 5. Explain briefly the following: a. Proto-oncogenes and their significance [3]
b. Synthesis of thyroid hormones [2]
- Q. 6. Discuss in brief: a. Reactive Oxygen Species (ROS) and their harmful effects [3]
b. Role of 2, 3, BPG in RBCs [2]
- Q. 7. Discuss the following: a. Glutamine synthesis, glutaminase activity and rate of gluconeogenesis rises in Acidosis. Give the underlying mechanism. [3]
b. Antioxidant vitamins [2]
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