



**FOUNDATION MODULE EXAM - 2019**  
**FIRST YEAR MBBS PART I – SEQs**

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**Total marks: 70**  
**Time Allowed: 2½ Hours**

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**Q No. 1.**

- a. Define Buffers. Enlist important body buffers (5)
- b. Demonstrate the buffering action of Carbonic acid and bicarbonate buffer, with the help of equations, when a strong acid or alkali is added to the solution. (5)

**Q No. 2**

- a. Define pH and describe its importance. (5)
- b. State the Henderson- Hasselbalch equation. What are its applications? (5)

**Q No. 3**

- a. What are colloidal solutions. Describe its types. (5)
- b. Enlist the properties of colloidal solutions and briefly describe any three of them. (5)

**Q No. 4**

- a. Describe Gibbs-Donnan equilibrium. (5)
- b. What is Dialysis? Describe its principle and function. (5)

**Q No. 5**

- a. Define and classify carbohydrates (5)
- b. Write down the reduction products of: Glucose, Mannose, Fructose, Galactose and Ribose. (5)

**Q No. 6**

- a. Write the oxidation reactions of glucose. (5)
- b. What are osazones? Why is the shape of osazone crystals of glucose, fructose and mannose is identical while galactose has different crystal shape? (5)

**Q No. 7**

- a. Classify receptors. Which hormones have nuclear receptors? (5)
- b. Write down the nucleosides and nucleotides of: (5)
  - a. Adenine
  - b. Guanine
  - c. Thymine
  - d. Cytosine