

**Roll No.**

**Total No. of Pages : 01**

**Total No. of Questions : 08**

**M.Sc. MLT (Biochemistry) (Sem.-1)**  
**ANALYTICAL & PHYSICAL BIOCHEMISTRY**  
**Subject Code : MMLT-101**  
**M.Code : 20023**

**Time : 3 Hrs.**

**Max. Marks : 100**

**INSTRUCTION TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- 1)
  - a) What is bioenergetics? Discuss the role of free energy,
  - b) Write a short note on applications of surface tension.
- 2) Write a detailed note on physiological buffers.
- 3) What is Henderson-Hasselbalch equation? Give its various applications.
- 4) Discuss various laws of thermodynamics. Discuss their role in biological system.
- 5)
  - a) Explain in detail the transport of molecules across the membrane.
  - b) Discuss principle and applications of bioluminescence.
- 6) Write notes on :
  - a) Activity Coefficient
  - b) Radio Immuno Assay (RIA)
- 7) What is ELISA? Discuss various types of ELISA and their importance in a diagnostic laboratory.
- 8) Name various methods of protein purification. Discuss chromatography in detail.

**NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.**