

**MASTER OF SCIENCE EXAMINATION, 2017**

(2nd Year, 1<sup>st</sup> Semester)

**PHYSICS**

**Biophysics**

**PHY/TE/301**

Time: Two hours

Full Marks: 40

**GROUP-A**

Answer any *two* questions.

5×2=10

1. Describe the process of protein synthesis in Prokaryotic system.
2. Describe the basic features of a DNA molecule. How do you explain the statement "DNA is the stable most than RNA molecule" ?
3. Discuss the Chemical Transport in neuromuscular junction (NMJ).
4. Explain with suitable diagram the interrelationship among carbohydrate, protein and fat in human metabolism.

**GROUP-B**

Answer any *two* questions.

15×2=30

1. Describe the functions of different enzymes that take part in DNA replication process. Experimentally verify the semiconservative mode of DNA replication.  
[7 + 8]

2. Determine the molecular weight of a biological macro-molecule by centrifugation technique. State the biological application of diffusion, osmosis and viscosity. What are the advantages of a physical technique over chemical technique for characterization of biomolecules? [9 + 2 + 2 + 2]
3. Explain the structure of Biological membrane with suitable diagram. Discuss briefly about the proteins in the membrane and the range of biological functions carried out by them. What is BLM structure? Discuss briefly about the range of biological functions carried out by lipid. [5 + 5 + 5]
4. Describe briefly the structure of eye. Explain with diagram about the different pigments present in the eye and describe their activities. What are myopic eye (near sighted vision) and Hyperopic eye (far sighted vision)? How they can be solved? [5 + 5 + 5]