



International Islamic University Chittagong

Department of Pharmacy

B. Pharm (Hon's) Program

Final Examination

Spring Semester 2019

Course Code: **Pharm-2305**

Course Title: **Biochemistry and Molecular Biology-I**

Time: 2 hours 30 minutes

Full Marks: 50

(Answer of separate groups should be given in separate scripts. Figures on right margin indicate marks)

Group A *(Answer any two questions from the followings)* **Marks: 20**

1. a) Define nucleic acid. Illustrate the nitrogenous bases composing the nucleotide molecules with their structures. 5
- b) What is phosphodiester bond? Draw phosphodiester bonds between the nucleic acids. 3
- c) What are the differences between purine and pyrimidine bases? 2
2. a) What is complementary base pairing? Name the ways of depicting DNA structure. 4
- b) Briefly describe the structural characteristics of RNA molecule. 4
- c) Point out the role of different types of RNA. 2
3. a) Define central dogma. Distinguish between denaturation and renaturation process. 4
- b) Write down the role of following enzyme required for DNA replication: 3
- i) Helicase ii) DNA polymerase iii) DNA ligase
- c) Briefly explain the double helical structure of DNA. 3

Group B *(Answer any three questions from the followings)* **Marks: 30**

4. a) Distinguish between essential and non-essential amino acids. 3
- b) Protein plays a crucial role in almost all biological process- justify the statement. 4
- c) Classify protein with examples. 3
5. a) Describe different types of protein purification techniques. 4
- b) Explain the structures of protein. 4
- c) Mention the biomedical importance of protein. 2
6. a) Summarize the properties of enzyme. 4
- b) What are the roles of temperature and pH in enzyme action? 3
- c) Explain the significance of enzymes in clinical diagnosis. 3
7. a) How can you determine the amino acid composition? 4
- b) Discuss the lock and key model of enzyme activity. 4
- c) Write short note on- Beta hairpin turn. 2