

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2016

B.Tech IV Semester

COURSE CODE: 10B11BT413

MAX. MARKS: 15

COURSE NAME: Molecular Biology

COURSE CREDITS: 04

MAX. TIME: 1 HR

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

- Q1. Explain, why thymine is present in DNA while RNA contain Uracil base? What makes thymine as a preferential base for DNA instead of Uracil? (2 mark)
- Q2. What is the energy source for the addition of new nucleotides to the growing daughter strand during DNA replication? (1 mark)
- Q3. Explain a methodology and its principle for purification of histone proteins from a cell nucleus. (3 mark)
- Q4. Explain three different conformation of DNA and their significance due to change in the surrounding micro-environment (2 mark)
- Q5. What do you understand by Chargaff's Rules and what does it imply about the structure of DNA? (2 mark)
- Q6. What is the principle behind "salting out" phenomenon and explain the application of this phenomenon in DNA isolation? (2 mark)
- Q7. Describe the location, significance of following in the process of DNA replication. (3marks)
- a) DNA polymerase III, b) primase, c) helicase, d) topoisomerase, e) single-stranded binding proteins, f) ligase.