

Dr. Harish Chandra

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- SEPTEMBER -2019

M. Sc. (Biotechnology) Semester-I

COURSE CODE: 18MS1BT112

MAX. MARKS: 15

COURSE NAME: Molecular genetics and genomics

COURSE CREDITS: 3

MAX. TIME: 1 HRS

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

Section A (1 marks each)

1. Discuss are three major areas of genetics.
2. What are Chargaff's rules?
3. Discuss importance of various chemical bonds present in DNA.
4. Write a short note on rolling-circle replication mechanism.
5. Sanger's sequencing is based on _____ method/mechanism.

Section B (2 marks each; attempt any five questions only)

6. What is pyro-sequencing? Write the reaction steps with enzyme involved in it. What are the source organisms for the enzyme utilized in the pyro-sequencing?
7. Write the various applications of pyro-sequencing.
8. Draw a well labeled structure of tRNA.
9. Discuss Meselson and Stahl experiment that demonstrate semi-conservative mode of DNA replication.
10. Draw a well labeled structure of replication fork.
11. Write a note on A, B and Z DNA.