

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-3 EXAMINATION- JUNE -2016

B.Tech. IV Semester

COURSE CODE: **10B11BT413**

MAX. MARKS: **35**

COURSE NAME: **Molecular Biology**

COURSE CREDITS: **03**

MAX. TIME: **2 HRS**

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

- Q1.** Define the biological significance of shine-dalgarno and kozak sequences. **(2 marks)**
- Q2.** Explain the two mechanism of transcription termination in prokaryotic cells. **(3 marks)**
- Q3.** What are Okazaki fragments? Why these fragments formed during replication and how the continuous synthesis is achieved on this strand of DNA? **(3 marks)**
- Q4.** Explain the following in brief. **(12 marks)**
- a) Characteristics of the genetic code
 - b) Post translational acetylations and methylations and their biological role
 - c) Transcription regulation through attenuation
 - d) Nuclear Spliceosome and mRNA spicing
- Q5.** Why modifications of mRNA are essential? Explain the process of 5' Capping and 3' modification of mRNA and explain the consequences of removal of these modifications from m-RNA. **(3 marks)**
- Q6.** A group of bacterial structural genes that are transcribed together (along with their promoter and additional sequences that control transcription) makes an assembly. Name this whole cassette of transcription regulatory machinery. Explain how this regulatory machinery in bacterial cells controls transcription as negative Inducible & negative repressible? **(6 marks)**
- Q7.** What do you understand by translation? Explain with the help of schematic representation the various stages of translation. How prokaryotic translation is differed from Eukaryotic translation? **(6 marks)**