Dr. Harsh

JAYPEE UNIVERSITY OF INFORMATRION TECHNOLOGY, WAKNAGHAT

T3 EXAMINATION – December 2019

M. Sc. I Semester

COURSE CODE: 18MS1BT112 MAX. MARKS: 35

COURSE NAME: Molecular Genetics and Genomics

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.

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1. Explain followings:- (COII & III; 5 X 2 = 10)
   a. Wobble Hypothesis
   b. Riboswitches
   c. Positive control and inducible operons
   d. Enhancers and insulators
   e. Give genomic data of (i) S. cerevisiae and (ii) Homo sapiens w.r.t.its genome size and estimated number of genes encoding proteins.
2. Describe Restriction Fragment Length Polymorphism method and its applications. (COIII; 3)
3. Write a note on Coordinated Gene Regulation in eukaryotes. (COIII; 3)
4. Describe the DNA microarray approach to identify the differentially expressed genes of non-small cancerous tissue in comparison to the normal tissue biopsy obtained from the clinical sample. (COIII; 3)
5. What is a biomarker? Explain with an example. (COIV; 3)
6. What is pharmocogenomics? Why screening of the EGFR gene is important before prescribing the Gefitinib? (COIV; 3)
7. Give detailed description of translation elongation and termination steps. (COI; 5)
8. Give detailed description of control of Trp operon through attenuation. (COIV; 5)