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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
Test-1, Examination- February 2016
B.Tech.- VI Semester

COURSE NAME: Comparative and Functional Genomics
COURSE CODE: 10B11BT611
COURSE CREDIT: 04

MAX MARKS:15
MAX TIME:1 hr

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

1. Draw a well labeled structure of eukaryotic gene? How you can differentiate a prokaryotic gene from eukaryotic gene? (Marks 1.5)
2. What is Exon and Intron? Explain, alternate splicing? Also, discuss with diagram that what are the possible ways a gene can give multiple gene products? (Marks 1.5)
3. Calculate gene density for *E. coli* and for *S. cerevisiae* ? Describe the relationship in their genome using gene density of *E. coli* and *S. cerevisiae* ? What you can deduce using gene density numbers? (Marks 3)
4. With diagram, discuss how human genome is organized (i.e., Genes, pseudogenes, intergenic region, repeats, microsatellite DNA etc.) (Marks 2)
5. What is the principle of Sanger sequencing? Describe the Solid Phase Illumina sequencing methods and how it differs from Sanger Sequencing? (Marks 3)
6. Describe the Pyrosequencing with reaction steps, discuss the enzymes, their sources and the roles? What are the different applications of Pyrosequencing? Also, describe the methods to annotate the sequenced DNA (Marks 4)