

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
Test-2 Examination-April 2017  
M. Tech./Ph.D. (Biotechnology)

Course Code: 14M11BT213  
Course Name: Functional Genomics  
Credit: 03

Max. Marks: 25  
Max. Time: 1.5 HR.

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

1. What is SNP? How SNPs are introduced into the genome? Describe a method to detection a SNP present in the given gene fragment? (3 marks)
2. Explain pharmacogenomics? Describe how the efficacy of Gefinitib drug is dependent on the individual genotype? (3 marks)
3. Explain micro RNA and silencing RNA? Explain the mechanism that how expression of gene is regulated? (3 marks)
4. Write on the application on Single cell RNA sequencing? (3 marks)
4. What is SAGE? Describe methods and its application? Use a diagram to explain if needed? (4 marks)
5. Describe the following genomics tools (4 marks)
  - a. RFLP
  - b. RAPD
  - c. SCAR and d. application of one the technique in the field Agricultural Biotechnology?
7. Recent advancement has been observed in the genomics arena, where genome sequencing and annotation has been achieved, Write down the genome size and number of gene present in any of the organisms belonging to prokaryotic system, lower eukaryotic system and higher eukaryotic system? (5 marks)