

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: BE
BRANCH: BIOTECHNOLOGY**

**SEMESTER : V
SESSION : MO/18**

**SUBJECT: BT5025 FUNCTIONAL GENOMICS AND rDNA TECHNOLOGY
TIME: 3.00 HOURS**

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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| Q.1(a) Enumerate the characteristics of a plasmid. | [2] |
| Q.1(b) Describe the characteristic feature of Bacterial artificial chromosome. | [4] |
| Q.1(c) Analyze the role IMAC method in recombinant protein purification. | [6] |
| Q.2(a) Write about ribozyme. | [2] |
| Q.2(b) Describe the applications of functional genomics. | [4] |
| Q.2(c) Analyze the role of reverse genetics in functional characterization of gene. | [6] |
| Q.3(a) What is the applications of Northern blot? | [2] |
| Q.3(b) Asses the role of real time PCR in gene expression study. | [4] |
| Q.3(c) Write about site directed mutagenesis and its applications. | [6] |
| Q.4(a) What is pyrosequencing? | [2] |
| Q.4(b) Evaluate the role of clone by clone approach in whole genome sequencing. | [4] |
| Q.4(c) Describe the role of NGS technology in genome sequencing. | [6] |
| Q.5(a) What is post transcriptional gene silencing? | [2] |
| Q.5(b) Evaluate the role of RNA interference in functional genomics. | [4] |
| Q.5(c) Describe the applications of antisense RNA technology. | [6] |
| Q.6(a) What is cDNA? | [2] |
| Q.6(b) Write about the screening of libraries with DNA probes and antisera. | [4] |
| Q.6(c) Analyze the applications of ESTs in functional genomics. | [6] |
| Q.7(a) What is insert? | [2] |
| Q.7(b) Discuss the role of rDNA technology in the development of transgenic plants and animals. | [4] |
| Q.7(c) Analyze the applications of rDNA technology in gene therapy. | [6] |

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