

Register Number:

**Date:13-04-2019**

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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27** |
| **B.Sc. MICROBIOLOGY – IV SEMESTER****SEMESTER EXAMINATION: APRIL 2019****MB416 – MICROBIAL GENETICS AND MOLECULAR BIOLOGY** |
| **Time –1 1/2 hour** |  | **Max Marks-35** |
| **This paper contains 1 printed page and 3 parts** |
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| **I. Answer any Five of the following 5x2=10**1. Define Gene, Genome, Genomics and Proteomics.
2. Draw the structure of a deoxy ribose nucleotide triphosphate.
3. Haw can mutations be exploited to serve man kind?
4. Draw the structure of a composite transposon.
5. What are Hfr strains? Give one application of Hfr strains.
6. Differentiate between mono cistronic and polycistronic mRNA.
7. What is DNA proof reading?

**II. Answer any Two of the following: 2x5=10**1. Give a comparative account of A and B DNA.
2. What is competency with reference to bacterial transformation? Describe the natural transformation mechanism in bacteria.
3. How alkylating and intercalating agents brings about mutations?

**III. Answer any Onethe following: 1x10=10**1. a. What is an ori site? What events take place at an ori site?

b. Describe transcription elongation in prokaryotes.1. Describe the mechanism of lac operon in presence and absence of lactose.

**IV.Answer the following 1X5=5**1. *Bacillus* has gene for amylase production. When checked for its expression, it was found that mRNA specific to amylase was present in the cell but no amylase was produced.

What in your opinion might have inhibited the expression of amylase in *Bacillus*? |
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