2017/ODD/09/27/MIBC–303/139

PG Odd Semester (CBCS) Exam., December—2017

MICROBIOLOGY

(3rd Semester)

Course No. : MIBCC–303

(Microbial Genetics and Genomics)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. What is 'competence' in bacteria? Explain the molecular mechanism of transformation in Gram'+ve' and Gram '–ve' bacteria. 14

2. Write notes on the following : 7+7=14

(a) High frequency of recombination(Hfr)

(b) F F conjugation

UNIT—II

3. Explain the mechanism of homologous recombination in detail. 14

4. What are transposons? Explain the genetic characteristics of transposons. 14

UNIT—III

5. Write notes on the following (any *two*) : 7×2=14

(a) *Col* plasmid

(b) Degradative plasmid

(c) F plasmid

6. Describe the different stages of multiplication in lytic phages. 14

UNIT—IV

7. Explain the regulation of a biodegradative pathway by taking 'lac operon' as example. How does 'c-AMP-CRP' complex regulate such operons? 14

8. Write notes on the following : 7+7=14

(a) Regulation by ppGpp

(b) Leader peptide and attenuation

UNIT—V

9. Explain the strategy of whole genome shotgun sequencing in genomics. 14

10. Write a detailed note on proteomics and strategy for the analysis of proteome. 14

★ ★ ★