

Roll No.....

Total No. of Sections : 03

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Code No. : 02/207(B)

Second Semester Examination, May-2018

M.Sc. MICROBIOLOGY

Paper - II

MICROBIAL GENETICS

Time : 3 Hrs.

Max.Marks : 80

Note : Section 'A' consists of 10 very short answer type questions, all of which are compulsory and should be attempted first. Section 'B' consists of four short answer type questions with internal options. Section 'C' consists of four long answer type questions with internal choice.

Section - 'A'

Answer the following very short-answer-type questions in one or two sentences : (2×10=20)

- Q.1 Write about any two sources of DNA damage.
- Q.2 What is BER?
- Q.3 Define mutation.
- Q.4 Name any two causes of mutation.
- Q.5 What happens during genetic recombination?
- Q.6 What is genetic recombination in bacteria?
- Q.7 What is a transposon in microbiology?
- Q.8 Define plasmid incompatibility.
- Q.9 What is a phage plaque?
- Q.10 Define RFLP.

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Section - 'B'

Answer the following short-answer-type questions with word limit 200-250 : (5 4=20)

Q.1 Make a note on SOS repair pathway.

OR

Describe formation of pyrimidin dimers in DNA.

Q.2 Explain gene as unit of mutation.

OR

Explain gene as unit of recombination.

Q.3 What is Lysogeny? Explain its applications.

OR

Give genetic analysis of yeast.

Q.4 Comment upon effect of parental ratio.

OR

Write short notes on RAPD and its limitations.

Section - 'C'

Answer the following long-answer-type questions with word limit 400-450 : (10 4=40)

Q.1 How the damages in DNA get repaired? Discuss evidences of repair system and explain nucleotide excision and base excision repair pathways.

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OR

Explain biological indication of damage to DNA and discuss deamination and alkylation in detail.

Q.2 Describe origin of mutation and discuss its types.

OR

Write an essay on molecular nature of recombination.

Q.3 What are plasmids? Describe their types and discuss their uses in genetic analysis.

OR

Give detailed account of transduction mechanism of gene transfer in bacteria.

× Q.4 Write features of T₄ life cycle and discuss T₄ gene organization in detail.

OR

Write an essay on the mechanism of genetic recombination in Phages.

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