

T.Y.B.SC. SEM – VI (2014 COURSE) : SUMMER - 2018
SUBJECT – MICROBIOLOGY: GENETICS OF EUKARYOTES & GENE
MANIPULATION

Day: **Friday**
Date: **20/04/2018**

S-2018-0783

Time: **12.00 NOON TO 02.00 PM**
Max. Marks: **40**

N.B.:

- 1) All the questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams **WHEREVER** necessary.

Q.1 Answer **ANY TWO** of the following: **[10]**

- a) With the help of a suitable diagram explain different arrangements of ascospores in *Neurospora crassa*
(Consider i) No crossing over ii) Crossing over)
- b) Give the importance of 'R' plasmid to the host cell. Describe the properties of 'R' plasmids.
- c) What are the different types of restriction endonucleases? Describe their properties.

Q.2 Answer **ANY TWO** of the following: **[10]**

- a) Explain "Mitochondria and Chloroplasts" as examples of extranuclear inheritance.
- b) Give the application of recombinant DNA technology in the treatment of waste.
- c) Explain with the help of a suitable diagram four strand double crossover in *Neurospora crassa*

Q.3 Answer **ANY TWO** of the following: **[10]**

- a) Describe the process of Agarose gel electrophoresis.
- b) Explain detection and purification of plasmids.
- c) Explain Maxam and Gilbert's method of DNA sequencing.

Q.4 Define/Explain/Write in short on **ANY FIVE** of the following: **[10]**

- a) Inheritance of coiling in snails
- b) PD's and NPD's
- c) Electrotransformation
- d) Edible vaccines
- e) BAC
- f) Ti plasmid
- g) T₄ DNA ligase

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