

**S.Y.B.SC. SEM – III (2014 Course) : WINTER - 2018**  
**SUBJECT : MICROBIOLOGY : BACTERIAL GENETICS (MB – 32)**

Day : Saturday  
Date : 13/10/2018

**W-2018-0802**

Time 12.00 NOON TO 02.00 PM  
Max. Marks : 40

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**N.B.**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagrams **WHEREVER** necessary.
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**Q.1** Attempt any **TWO** of the following: **(10)**

- a) With the help of a suitable example explain “Nucleic acid is the genetic material in viruses.”
- b) Draw the structures of all pyrimidines.
- c) Explain rolling circle mechanism for DNA replication in viruses.

**Q.2** Attempt any **TWO** of the following: **(10)**

- a) Enlist the milestones which led to the deciphering of the genetic code.
- b) How do intercalating agents give rise to mutations?
- c) Explain with the help of Luria and Delbrucks experiment that mutations are spontaneous.

**Q.3** Attempt any **TWO** of the following: **(10)**

- a) Explain the role of different enzymes involved in DNA replication.
- b) Describe different secondary structures of DNA and RNA.
- c) Why are repair systems important? Enlist different methods of repair and differentiate between light repair and dark repair.

**Q.4** Write in short on /Explain/Define any **FIVE** of the following: **(10)**

- a) Transversion
- b) Mutation rate
- c) Wobble hypothesis
- d) Crick’s contribution
- e) Bacterial chromosome
- f) Termination codon
- g) Macrolesions

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