

**S.Y.B.SC. SEM – III (CBCS - 2016 COURSE) : SUMMER - 2018**

**SUBJECT: MICROBIOLOGY: BACTERIAL GENETICS**

Day : **Tuesday**

Time: **03.00 PM TO 06.00 PM**

Date : **24/04/2018**

**S-2018-0654**

Max. Marks: 60

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the **RIGHT** indicate full marks.
  - 3) Draw neat labeled diagrams **WHEREVER** necessary.
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**Q.1** Attempt any **TWO** of the following: (12)

- a) Explain with the help of suitable experiment “DNA is the genetic material in viruses.”
- b) Describe the structure of prokaryotic chromosome.
- c) Describe “Rolling circle replication” in viruses.

**Q.2** Attempt any **TWO** of the following: (12)

- a) With the help of a suitable diagram/ data explain the following experiment with its conclusion:  
“Luria and Delbrück’s experiment.”
- b) Enlist and give the functions of different enzymes and proteins involved in DNA replication.
- c) Describe the features of genetic code.

**Q.3** Attempt any **TWO** of the following: (12)

- a) Describe special structures in DNA and RNA.
- b) Explain the central dogma in molecular biology.
- c) Explain the action of base analogues as mutagenic agents.

**Q.4** Attempt any **THREE** of the following: (12)

- a) Differentiate between Reversion and Suppression.
- b) What is complementation? Explain with suitable examples.
- c) What are Okazaki fragments?
- d) Comment on Initiation and Termination codons.

**Q.5** Explain/ define/ comment on write in short on/ draw a well labeled diagram of any **FOUR** of the following: (12)

- a) Viral chromosomes
- b) Stem and loop structure
- c) Auxotrophic mutants
- d) Missense mutations
- e) Photo reactivation
- f) Pyrimidines

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