

**T.Y.B.SC. SEM – V (2014 COURSE) : SUMMER - 2018**  
**SUBJECT: MICROBIOLOGY : GENETICS OF PROKARYOTES (MB – 55)**

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

**S-2018-0753**

Time: **03.00 PM TO 05.00 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) Describe the regulation of Lactose operon.
- b) How does the Hfr strain donate to the  $F^-$  cells?
- c) Comment on the genetic phenomenon mediated by transposons.

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

- a) With the help of a suitable diagram explain the mechanism underlying simple transposition.
- b) Describe different fertility types in *Streptomyces coelicolor*.
- c) Explain the process of artificial transformation.

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

- a) Comment on Interrupted mating and Time-of-Entry map in *E.coli*.
- b) Explain the autoregulation in tryptophan operon.
- c) Differentiate between generalized and specialized transduction.

**Q.4** Write short notes on **ANY FIVE** of the following: **[10]**

- a) Cotransduction
- b) Transformasomes
- c) High frequency transducing lysate
- d) Inducer
- e) Plasmids of *Streptomyces coelicolor*
- f) Transposons and evolution
- g) cAMP – CAP complex

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