

**T.Y.B.SC. SEM – V (2014 Course) : WINTER - 2018**  
**SUBJECT: MICROBIOLOGY: GENETICS OF PROKARYOTES**

Day : Wednesday  
Date : 17/10/2018

**W-2018-0846**

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 labelled diagram **WHEREVER** necessary.
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**Q.1** Attempt **ANY TWO** of the following: **[10]**

- a) Give the regulation of arabinose operon.
- b) Differentiate between the Hfr and F<sup>+</sup> cells.
- c) Describe the role of phage P<sub>1</sub> in transduction.

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

- a) Describe the structure of a transposon with the help of a suitable diagram.
- b) Explain the process of transformation in Gram negative bacteria.
- c) Describe the positive regulation by CAP – cAMP complex.

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

- a) Describe the plasmids present in *Streptomyces coelicolor*. Give the economic importance of this actinomycete.
- b) How is the bacterial genome mapped with the help of transduction?
- c) Explain with the help of a suitable diagram “time of entry map” in *E.coli*.

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

- a) Isolation of Hfr cells
- b) Prophage
- c) Low MOI
- d) Nomenclature of transposon
- e) Transformasomes
- f) Mobilizable plasmid
- g) Recipient conjugal synthesis

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