

S.Y.B.SC. SEM – III (CBCS - 2016 COURSE) :WINTER - 2017
SUBJECT: MICROBIOLOGY: BACTERIAL GENETICS

Day : Monday
Date : 06/11/2017

Time: 11.00 A.M. TO 02.00 PM
Max. Marks: 60

W-2017-0576

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 transforming principle.”
 - b) Describe different forms of DNA.
 - c) Describe ‘ θ ’ replication in bacteria.
- 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:
“Meselson and Stahl’s experiment.”
 - b) Describe the process of DNA synthesis.
 - c) Enlist different milestones in deciphering the genetic code.
- Q.3** Attempt any **TWO** of the following: (12)
- a) With the help of a suitable diagram/ data explain the following experiment with its conclusion:
“Griffiths experiment.”
 - b) What are macrolesions? Explain with examples.
 - c) Explain the action of base modifiers as mutagenic agents.
- Q.4** Attempt any **THREE** of the following: (12)
- a) Differentiate between Rolling circle replication and D loop formation.
 - b) Explain the mutagenic action of physical agents on DNA.
 - c) Give the functions of Gyrase and Helicase.
 - d) What are Isoaccepting t-RNAs?
- Q.5** Explain/ define/ comment on write in short on/ draw a well labeled diagram of any **FOUR** of the following: (12)
- a) Major and minor groove
 - b) SSB proteins
 - c) Base analogues
 - d) Nonsense mutations
 - e) Ames test
 - f) Purines

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