

BACHELOR OF SCIENCE (CBCS-2018 COURSE)
S. Y. B. Sc. Sem-III :SUMMER- 2022
SUBJECT : MICROBIOLOGY : BACTERIAL GENETICS

Day : Thursday

Date : 7/7/2022

S-18360-2022

Time : 03:00 PM-06:00 PM

Max. Marks : 60

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) How will you proceed to isolate an auxotrophic mutant?
- b) Justify the statement. "The code is almost universal".
- c) How Meselson and Stahl's experiment supported the semiconservative nature of DNA replication?

Q.2 Attempt **ANY TWO** of the following: [12]

- a) What is induced mutation? Discuss the role of base analogs in mutation.
- b) Discuss the wobble hypothesis.
- c) Describe the experiment which prove that RNA is the genetic material in some viruses.

Q.3 Attempt **ANY TWO** of the following: [12]

- a) Discuss the Luria and Delbruck's experiment.
- b) Describe the role of proteins and enzymes in DNA replication.
- c) Explain the process of translation with the help of a suitable diagram.

Q.4 Attempt **ANY THREE** of the following: [12]

- a) Termination Codons.
- b) Transition Mutation
- c) Mutation Rate.
- d) DNA Methylation

Q.5 Attempt **ANY FOUR** of the following: [12]

- a) What are resistant mutants?
- b) Describe the key features of Z form of DNA.
- c) Justify the statement. "Genetic Code is Commaless"
- d) What are intercalating agents?
- e) Discuss the photoreactivation mechanism of DNA repair.
- f) What are the characteristics of a genetic material?