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**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**
(For Candidates admitted from 2020-2021 onwards)
PG DEGREE EXAMINATIONS APRIL - 2021



**M.Sc., – MICROBIOLOGY
MICROBIAL GENETICS**

Time: 3 Hrs

Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER**(10X1=10)**

1. The nucleic acid synthesis takes place in -----
a) 3' - 5' direction b) 5'-3' direction c) Both ways d) Any direction
2. Hershey and chase's experiment were based on the principle -----
a) Transformation b) Translation c) Transduction d) Transcription
3. The proof-reading enzyme in DNA replication is -----
a) Primase b) DNA polymerase I c) Ligase d) DNA polymerase II
4. Which step not occurs in translation?
a) Replication b) Termination c) Elongation d) Initiation
5. In Lac-operon, which protein is not regulated by the repressor?
a) Galactosidase b) Lactose permease c) Tryptophan d) Transacetylase
6. The primary control of gene expression takes place at the level of -----
a) Translation b) Replication c) Transcription d) None of the above
7. Bacterial strain having F factor is -----
a) F1 b) F⁺ c) F⁻ d) Hfr
8. The transfer of genes from one cell to another by a bacteriophage is known as -----
a) Recombination b) conjugation c) Transduction d) Transformation
9. Damage and errors in DNA cause -----
a) Mutation b) DNA repair c) Translation d) Transcription
10. How many kinds of mutation are found in only one base of DNA?
a) 1 b) 2 c) 3 d) 4

PART- B

ANSWER ALL THE QUESTIONS

(5X7=35)

11. a) Draw the structure and functions of DNA

(OR)

b) Explain the structure of t-RNA

12. a) Differentiate prokaryotic and eukaryotic replication

(OR)

b) Give an account on Meselson and Stahl experiment

13. a) Briefly explain the Lac- operon model of gene regulation

(OR)

b) Comment on operon concept

14. a) Write short notes on specialized transduction

(OR)

b) Illustrate the bacterial transformation

15. a) List out the significance of fluctuation test

(OR)

b) Write short notes on chemical mutagen

PART-C

ANSWER ANY THREE QUESTIONS

(3X10=30)

16. Explain Hershey – chase experiment for identification of genetic material

17. Explain the process of DNA replication

18. Describe about capping and polyadenylation of mRNA

19. Write in detail about transduction and its types

20. Write short notes on following

a) Spontaneous mutation

b) Induced mutation