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DHANALAKSHMI SRINIVASAN COLLEGE OF ARTS & SCIENCE FOR WOMEN (AUTONOMOUS)



(For Candidates admitted from 2018-2019 onwards)

UG DEGREE EXAMINATIONS APRIL – 2021 B.SC - MICROBIOLOGY MICROBIAL GENETICS

Time: 3 Hrs Max.Marks: 75

PART-A

CHOOSE THE CORRECT ANSWER. (10*1=10)1. In a DNA double helix the bases are held together by hydrogen bonds. These hydrogen bonds are a) Covalent bonds b) Non-covalent bonds c) Ionic bonds d) Van der Waals forces 2. Which of the following is not a feature of the genetic code? a) Triplet b) Degenerate c) Non – overlapping d) Ambiguous 3. The genetic information in DNA is stored by a) Sugar b) Phosphate c) Nitrogenous base d) Polymerase 4. The RNA molecules which carry the genetic information copied from DNA is a) tRNA b) mRNA c) rRNA d) snRNA 5. The type of mutation in which the cause of mutation is not known is termed as a) Spontaneous mutation b) Suppressor mutation c) Nonsense mutation d) Mis-sense mutation 6. The chemical mutagen that affects only replicating DNA is a) Acridine dye b) Alkylating agent c) Deaminating agent d) Base analog 7. Which of the following enzyme is used in photoreactivation process? a) DNA ligase b) DNA photolyase c) DNA polymerase d) Primase 8. Which of the following enzyme works in the nucleotide excision repair? a) DNA photolyase b) ABC exinuclease c) DNA glycosylase d) RecA 9. Which type of *E. coli* strain was chosen to prove the experiment of conjugation? a) prototrophs

c) polyauxotrophs

b) auxotrophs

d) autotrophs

- 10. Which of the following cells of *E. coli* are referred to as F

 a) Male cells
 b) Female cells
 c) Both male and female cells
 d) Neither male nor female cells
 - PART B

ANSWER ALL THE QUESTIONS

(5*7=35)

11. a) Write short notes on structure of tRNA.

(OR)

- b) Give a brief note on Genetic code.
- 12. a) Outline the Hershey and Chase experiment.

(OR)

- b) Comment briefly on Experiments of Fraenkel and Singer to prove RNA as a genetic material.
- 13. a) List out the physical mutagenic agents.

(OR)

- b) Write notes on frame shift mutation.
- 14. a) Describe briefly on Nucleotide excision repair mechanisms.

(OR)

- b) Brief out on mismatch repair.
- 15. a) Give a note on process of Conjugation.

(OR)

b) Write notes on Transformation.

PART - C

ANSWER ANY THREE QUESTIONS

(3*10=30)

- 16. Discuss in detail on structure and types of DNA.
- 17. Write an essay on Griffith experiment.
- 18. Define mutation and add a detailed note on different types of mutation.
- 19. Give an account on SOS repair mechanisms.
- 20. Write a detailed account on specialized & generalized Transduction.