R-19

Code:5309E1/19/BL

Faculty of Science

B.Sc (Microbiology) III-Year, CBCS –V Semester

Backlog Examinations -June/July, 2022

PAPER: Molecular Biology and Microbial Genetics

Time: 3 Hours Max Marks: 80

Section-A

I. Answer any *eight* of the following questions (8x4=32 Marks)

1. Law of segregation
2. Plasmid
3. Linkage
4. Mutation
5. UV photo-dimers
6. DNA repair
7. Cistron
8. Constitutive genes
9. Lac-operon
10. Ligases
11. Gene cloning
12. C-DNA library

Section-B

II. Answer the following questions (4x12=48 Marks)

13.(a) Explain the Structure of DNA- Watson & Crick model.

(OR)

(b) What is DNA replication? Explain the mechanism of semi-conservative mode Of DNA replication.

14.(a) Write an essay on spontaneous and induced mutations.

(OR)

(b) Give an account on Bacterial gene transfer methods with neat diagrams.

15.(a) What are the different types of RNA and mention their functions?

(OR)

(b) What is Genetic Code write its features.

16.(a) Explain the basic principles of Genetic Engineering.

(OR)

(b) Give the applications of Genetic Engineering in different fields of science.

*****

R-19

Code:5309E1/R

Faculty of Science

B.Sc. (Microbiology) III-Year, CBCS-V Semester

Regular Examinations –Jan, 2023

PAPER: Molecular Biology and Microbial Genetics

Time: 3 Hours Max Marks: 80

Section-A

I. Answer any *eight* of the following questions (8x4=32 Marks)

1. Alleles
2. Transposons
3. RNA as genetic material
4. Frameshift Mutations
5. Alkylating agents
6. Generalized Transduction
7. Cistron
8. One gene – one polypeptide - hypothesis
9. Wobble Hypotheisis
10. DNA Ligases
11. Gene Cloning
12. c-DNA library

Section-B

II. Answer the following questions (4x12=48 Marks)

13.(a) Discuss in brief Mendelian Laws with suitable examples.

(OR)

(b) What are plasmids? Write a brief note on their types and applications.

14.(a) Write a detailed note on Physical Mutagens.

(OR)

(b) Explain gene transfer through Conjugation.

15.(a) Write a brief note on types of RNA and their functions.

(OR)

(b) Explain in brief, gene regulation using Lac Operon as a model.

16.(a) Write on Polymerases and their functions.

(OR)

(b) Discuss various applications of genetic engineering in Industry and Medicine.

*****

R-19

Code: 5309E1/19/BL

Faculty of Science
B.Sc (Microbiology) III-Year, CBCS –V Semester
Backlog Examinations –June, 2022
PAPER: Molecular Biology and Microbial Genetics

Time: 3 Hours Max Marks: 80

Section-A

I. Answer any EIGHT of the following questions (8x4=32 Marks)

1. Alleles
2. DNA structure
3. Replication fork
4. Tandem duplication
5. Chemical mutagen - EMS
6. Transformation
7. Types of RNA
8. RNA Polymerase
9. Regulatory genes
10. Restriction endonucleases
11. Vectors
12. Bt- cotton

Section-B

II. Answer the following questions (4x12=48 Marks)

13.(a) Write on the significance of crossing over & linkage in finding the order & distance of genes.

(OR)

(b) Describe extra chromosomal genetic elements – Plasmids & Transposons.

14.(a) Explain about different DNA damages & repair mechanisms.

(OR)

(b) Write an essay on Structural & Numerical changes of chromosomes with examples.

15.(a) Explain the mechanism of RNA transcription in Prokaryotes.

(OR)

(b) What is Operon concept? Explain the Lac Operon concept explaining the regulation of gene expression in bacteria.

16.(a) Enumerate the different enzymes and their role in Genetic Engineering.

(OR)

(b) Describe C-DNA libraries construction and their significance.

*****