

CSSR & SRRM DEGREE & PG COLLEGE

(AUTONOMOUS)

UG (CBCS) REGULAR EXAMINATIONS, DECEMBER-2024

BSc (Botany) Honours, SEMESTER-I

COURSE - II: INTRODUCTION TO APPLIED BIOLOGY

(w.e.f. 2024-25 Admitted Batch)

Time: 2 hours

Max Marks: 70

(No additional sheet will be supplied)

A

Section-A

Answer all the multiple choice questions. Each question carries 1 mark. 30x1=30M

1. Microbiology is derived from

- | | |
|------------|-------------|
| A) Latin | B) Greek |
| C) Spanish | D) European |

2. Which of the following era discuss about existence of Microbes

- | | |
|-------------------|----------------------|
| A) Pre-Golden era | B) Post-Golden era |
| C) Golden era | D) None of the above |

3. Smallpox eradication programme discovered in the year of

- | | |
|---------|---------|
| A) 1956 | B) 1957 |
| C) 1959 | D) 1958 |

4. Petri dish is a

- | | |
|---------------------|-------------------------|
| A) Sticky substance | B) Gelatinous substance |
| C) A&B | D) None of the above |

5. Which of the following is example of Spirilla

- | | |
|------------------|-------------------------|
| A) Streptococcus | B) Bacillus |
| C) Helicobacter | D) All of the mentioned |

6. Protein word is derived from

- | | |
|--------------|---------------|
| A) Protease | B) Proteios |
| C) Protenase | D) Proteinate |

7. Methionine is an

- | | |
|-----------------|---------------------|
| A) Protein | B) Amino acid |
| C) Carbohydrate | D) Non of the above |

8. Albumins are soluble in

- | | |
|----------|---------------------|
| A) Water | B) Fats |
| C) Salt | D) All of the above |

9. DNA consists of which cos ends

- | | |
|--------------|--------------|
| A) 3' and 5' | B) 4' and 5' |
| C) 2' and 5' | D) 3' and 6' |

10. DNA structure was proposed by

- | | |
|---------------------|---------------------|
| A) Erwin Chargaff | B) Watson and Crick |
| C) Watson and James | D) A and B |

[P.T.O]

11. What is the primary goal of Bioremediation

- A) Creating synthetic organisms
- B) Extracting minerals from the environment
- C) Removing pollutants
- D) Self cleaning

12. Biofuels are derived from

- A) Fossil fuels
- B) Nuclear reactions
- C) Living organisms
- D) Minerals

13. Which enzymes used to cut DNA at specific sites

- A) Polymerases
- B) Ligases
- C) Restriction enzymes
- D) Helicase

14. The Process of introducing DNA into host is called

- A) Amplification
- B) Transformation
- C) Replication
- D) Translation

15. Which is the first transgenic food crop

- A) Bt Corn
- B) Bt Cotton
- C) Golden rice
- D) Flavr Savr Tomato

16. Which polymerase is used to amplify DNA in PCR

- A) DNA polymerase
- B) Ligase
- C) Taq DNA polymerase
- D) RNA polymerase

17. Which technique is used to produce monoclonal antibodies

- A) ELISA
- B) PCR
- C) Western Blotting
- D) Hybridoma Technology

18. Which cell type is fused with a cancerous cell to create a hybridoma

- A) T-cell
- B) B-cell
- C) Plasma
- D) All of the above

19. What is Eugenics

- A) A form of Gene therapy
- B) The study of plant gametes
- C) Improving gene quality of human
- D) A type of prenatal testing

20. Which technology is used in Gene therapy

- A) DNA finger printing
- B) CRISPR
- C) PCR
- D) Radioactive isotopes

21. What is the primary goal of data collection in Biostatistics?

- A) To prove a hypothesis
- B) To make inferences about a population
- C) To manipulate data outcomes
- D) To ensure accurate visualization

22. Which of the following is not a measure of central tendency?

- A) Mean
- B) Median
- C) Range
- D) Mode

23. A statement made about a population for testing purpose is called?

- A) Statistic
- B) Hypothesis
- C) Level of Significance
- D) Test-Statistic

24. What does genomics refer to in Bioinformatics?

- A) Study of individual genes
- B) Study of proteins and their functions
- C) Study of entire genome & functions
- D) Study of cellular structures

25. What is the primary focus of the SwissProt database?

- A) Protein sequences
- B) DNA sequences
- C) Medical records
- D) Geological data

[P.T.O]

26. Which technology is commonly used for high through put DNA sequencing in genomics?

- A) ELISA
- B) PCR
- C) Micro array
- D) Next-generation sequencing

27. Which database is used primarily for storing and retrieving information?

- A) PDB
- B) Swissport
- C) Uniport
- D) Pub Med

28. What kind of information can be found in the NCBI Gene database?

- A) Protein structures
- B) Protein interactions
- C) Genetic disorders
- D) Gene expressions

29. Which of the following provides information about 3-D structures of proteins?

- A) Gen Bank
- B) Uniport
- C) PDB
- D) NCBI

30. PDB stands for

- A) Protein Data Bank
- B) Protein Data Box
- C) Protein Data Base
- D) Protein Data Bundle

Section-B

Answer all fill in the blanks questions. Each question carries 1 mark.

10x1=10M

- 31. t-RNA is of _____ shape.
- 32. Small molecules are assembled into large one is called _____.
- 33. Flavonoids are the _____ in Plants.
- 34. Immunogen is an _____.
- 35. Nitrogen is converted to Ammonia by _____ enzyme.
- 36. Biotechnology was first termed by _____.
- 37. _____ precursor is present in Golden rice.
- 38. Breaking down of carbohydrates into cellulose is known as _____.
- 39. Restriction enzymes have _____ ends and _____ ends.
- 40. Onco-mice are transgenic that are engineered for _____.

Section-C

Answer all very short answer questions. Each question carries 1 mark.

10x1=10M

- 41. What is Adjuvant?
- 42. Define Immunology?
- 43. What are the four Nucleotides in DNA & RNA?
- 44. What is Purine?
- 45. What are Carotenoids?
- 46. Give any two examples of transgenic plants and animals?
- 47. What does Bt stands in Bt cotton?
- 48. Define Lipofection?
- 49. Purpose of DNA finger printing?
- 50. Name the four Blotting techniques?

[P.T.O]

Section-D

Answer all match the following questions. Each question carries 1 mark. 10x1=10M

Group-A

51. Chromo proteins
52. Guanine
53. Steroids
54. Paratope
55. Plague
56. Rhizobia
57. PCR
58. 1st Gen Crops
59. pBR322
60. Bt Cotton

Group-B

- A. Nucleotide
- B. Lipids
- C. Chlorophyll
- D. Yersinia Pestis
- E. Antibody
- F. Biotic stress
- G. Food crops
- H. Plasmid
- I. Polymerase Chain reaction
- J. N2 fixation

Section-E

Answer all True or False questions. Each question carries 1 mark.

10x1=10M

61. Carbohydrates are complex sugars.
62. Polysaccharides consists of more than two monomers.
63. Phagocytosis is an Immune cell.
64. T-Cells arise from Bone Marrow.
65. Cyanobacteria is a carbon fixing bacteria.
66. Organic chemistry focuses on the study of carbon-containing compounds.
67. Ionic bonds cause opposite charge.
68. Van der Waal forces are covalent bonds.
69. Fusion of Male and Female gametes is called gametogenesis.
70. Crocodile heart is four chambered.

