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F - 1503

C.B.S (Tenth Semester)
EXAMINATION, May - June, 2022
PROTEOMICS AND GENOMICS
[BE-1001]

Time : Three Hours] *[Maximum Marks:40*

Note: Attempt all the sections as directed.

(Section - A)

(Objective/Multiple Choice Questions)

(0.5 marks each)

Choose the correct answer:

1. Stacking and Separating Gel is related to
   (A) DNA electrophoresis
   (B) Protein Electrophoresis
   (C) Both (A) and (B)
   (D) None of the Above

2. CDFD lab related to DNA finger printing is located in
   (A) Delhi
   (B) Bangalore
   (C) Chennai
   (D) Hyderabad
3. Which one is correct regarding SNPs
   (A) Single-nucleotide peptides
   (B) Single-nucleotide polycloning
   (C) Protein analysis tool
   (D) None of the above
4. DNA Microarray is useful in
   (A) Forensic analysis
   (B) Detection of cancer cells
   (C) Genotyping
   (D) All of the above
5. The role of ammonium persulfate in SDS-PAGE is :
   (A) Polymerization
   (B) Inducer
   (C) Separator
   (D) None of the above

6. Purpose of Human Genome Project is

   (A) DNA analysis

   (B) Human genome sequence

   (C) Both (A) and (B)

   (D) None of the above

7. Highly sensitive detection technique for pathogens is

   (A) ELISA

   (B) Microarray

   (C) PCR

   (D) Biosensor

8. Genomics is related to

   (A) Study of Protein

   (B) Study of DNA

   (C) Study of genome

   (D) None of the above

9. Modification in proteins can be done in

   (A) Biomedical engineering

   (B) Protein engineering

   (C) Tissue engineering

   (D) Both (A) and (B)

10. The correct meaning of IEF is

    (A) pH analysis

    (B) Charge analysis

    (C) Gravity analysis

    (D) All of the above

11. Protein sequencing is a study of

    (A) Peptides sequence

    (B) Proteins structure

    (C) Amino acid sequence

    (D) All of the above

12. Protein-Protein Interaction is useful in

    (A) Biological processes

    (B) Disease diagnosis

    (C) Both (A) and (B)

    (D) None of the above

13. Expressed sequence Taq is used in

    (A) Identify RNA

    (B) Identify genome

    (C) Identify gene transcripts

    (D) Identify protein

14. Identify the correct biomolecues
    (A) Glucose
    (B) DNA, RNA and Proteins
    (C) Cholesterol
    (D) All of the above
15. DNA finger printing was developed by
    (A) A Jeffreys
    (B) Watson and Crick
    (C) H. Khorana
    (D) None of the above
16. Which one is not related to chromatography
    (A) Size exclusion
    (B) Affinity
    (C) Ion exchange
    (D) PAGE
17. NCBI is basically provides
    (A) Biomedical and genomic information
    (B) DNA sequence database
    (C) Both (A) and (B)
    (D) None of the above
18. DNA nanoball sequencing is
    (A) Common sequencing
    (B) Next generation sequencing
    (C) Both (A) and (B)
    (D) None of the above

19. Mass spectrometry is used for
    (A) Measuring the mass-to-charge ratio
    (B) Charge analysis
    (C) Practical analysis
    (D) None of the above
20. Term meta-genomics is used for analysis of
    (A) Entire nucleotide sequences
    (B) Protein studies
    (C) DNA sequence study
    (D) None of the above

Section - B

(Very Short Answer Type Question)

(0.75 marks each)

Note: Attempt all questions.

1. Define the protein engineering with examples.
2. Explain the SDS-PAGE and discuss its types.
3. What is DNA finger printing? How does it work ?
4. What is Microarray? Discuss with example.
5. What is affinity chromatography? Write the name of two chromatography techniques.
6. What is Mass spectrometry? Discuss with examples.
7. What is genome? Discuss the HGP in details.
8. What is proteomics and genomics?
9. Discuss the application of proteome analysis of drug.
10. Discuss the importance of genomics.

Section - C

(Short Answer Type Question)

(1.25 marks each)

Note: Attempt all questions.

1. Write down the short notes on gel-electrophoresis.
2. Write the short notes
   (A) DNA sequencing
   (B) ENCODE project
3. Discuss the following with examples
   (A) Metagenoumics
   (B) 2D gel image analysis
4. What is protecomics? Discuss the importance in brief.
5. Discuss the IEP in details.
6. What is ENCODE Project?
7. Discuss the SNPs.
8. What is protein chip technology?
9. What is cDNA library?
10. Discuss the application of proteomics and genomics in brief.

Section - D

(Long Answer Type Question)

(2 marks each)

Note: Attempt all questions.

1. Discuss the biological database with examples?

OR

Write down the short notes on followings :

(A) DNA finger printing

(B) Role of Microarray in diagnosis

2. What is protein engineering? Discuss the applications with examples.

OR

Discuss the proteomics industry in details.

3. What is chromatography? Discuss the affinity chromatography with examples.

OR

Write down the short notes on followings with structure:

(A) PAGE

(B) 2D Gel image analysis

4. Discuss the working principle of Mass spectrometry.

OR

Discuss the application of proteome analysis to drug

5. What is genomics ? Discuss the DNA sequening in details.

OR

Write down the short notes on following.

(A) HapMap Project

(B) ENCODE Project