

SUBJECT CODE: 19BY/PE/BI15

M. Sc. DEGREE EXAMINATION - NOVEMBER 2022  
BIOTECHNOLOGY  
FIRST SEMESTER

COURSE : ELECTIVE  
PAPER : BIOINSTRUMENTATION  
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS:

(10 x 2 = 20)

1. Virus can be viewed using
  - a) Dark field Microscope
  - b) Phase contrast Microscope
  - c) FTIR
  - d) Scanning electron Microscope
2. Which one of the following is not used in nuclear sequencing?
  - a) PCR
  - b) RT-PCR
  - c) Cytophotometry
  - d) Sequencer
3. FPLC stands for
  - a) Free Protein Liquid Chromatography
  - b) High Performance Liquid Chromatography
  - c) Fast Protein Liquid Chromatography
  - d) Fast Performance Liquid Centrifuge
4. Which type of electrophoresis is used to separate Protein?
  - a) Western blot
  - b) Northern blot
  - c) Southern blot
  - d) Pulse field electrophoresis
5. Detect which one is the radioisotope
  - a) C-8
  - b) C-10
  - c) C-12
  - d) C-14
6. Expand: MALDI-TOF.
7. Comment on Microarray.
8. State the application of HPLC.
9. Comment on capillary Electrophoresis.
10. Define isotope.

SECTION – B

ANSWER ALL THE QUESTIONS:

(5x 8 = 40)

11. (a) Explain the principle of FTIR and its applications.  
(or)  
(b) Explain the principle of TEM.
12. (a) Explain how do you detect COVID-19 using PCR.  
(or)  
(b) Write an essay on Circular Dichroism.
13. (a) List out the different types of Rotors used in Centrifuge.  
(or)  
(b) How do you separate the given Pigment sample using TLC?
14. (a) Explain the following: a) DGGE b) TGGE  
(or)  
(b) Explain the principle of Pulse Field Gel Electrophoresis.
15. (a) Outline the safety measures in handling radioactive isotope.  
(or)  
(b) Write an essay on Scintillation counter.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS:**

**(2 X 20 = 40)**

16. Write an essay on Biosensors.
17. Illustrate ion exchange and affinity chromatography with a Diagram.
18. How do you separate a given protein sample using Electrophoresis Technique?
19. Explain in detail on GM counter and List out the applications of Radioisotope in Biology.

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