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**SECTION 'C'** **12×4=48**  
(Long Answer Type Questions)

**Note :** Answer the following questions in 500 words.

1. Describe the principle and application of UV spectrophotometer.

Or

Describe the principle and application of densitometer.

2. Describe the principle and application of Electron microscope.

Or

Give an account of principle and application of phase contrast microscopy.

3. How does scintillation counter work, give an application it in research.

Or

Describe the application of magnetic resonance Imaging (MRI) in research.

4. Describe principle and types of Electrophoresis.

Or

Describe principle and types of centrifuge.

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Roll No.....

**M.Sc. I Semester Examination, April-2021**

**BIOTECHNOLOGY**

**Paper IV**

(Bio-Techniques)

Time : 3 Hours ]

[Maximum Marks : 80

**Note :** All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/Multiple Choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.

**SECTION 'A'** **1×8=8**

(Objective Type Questions)

Choose the correct answer :

1. An Instrument that uses an electrode to detect pH of solution :
- (a) Electrophoresis (b) Colorimeter  
(c) Centrifuge (d) pH meter
2. Beer's law states that the intensity of light decreases with reselect to..... .
- (a) Volume (b) Distance  
(c) Concentration (d) Composition

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3. Which of the following is a source of light used in spectroscopy ?
- (a) Laser (b) Tube light  
(c) Sodium lamp (d) Tungsten lamp
4. Which of the following, is used to visualize live cell ?
- (a) SEM (b) TEM  
(c) Phase contrast (d) All of them
5. What is minimum distance for the eye to focus any object ?
- (a) 11 cm. (b) 25 cm.  
(c) 4 cm. (d) 40 cm.
6. The instrument used to draw clear magnified sketches of object under microscope is :
- (a) Compound microscope  
(b) Light microscope  
(c) Camera attached stereomicroscope  
(d) Camera lucida
7. Which technique separates charged particle using electric field ?
- (a) Hydrolysis (b) Electrophoresis  
(c) Protein Denaturation (d) Chromatography

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8. Which of the following emitted particles consists of two protons ?
- (a) alpha (b) beta  
(c) gamma (d) zeta

**SECTION 'B'**

**6×4=24**

*(Short Answer Type Questions)*

**Note :** Answer the following questions in 250 words.

1. Explain principle of pH meter.

Or

Explain application of NMR.

2. Describe tools of bioinformatics.

Or

Describe application of fluorescence microscopy.

3. What is radioactive decay ? Explain in brief.

Or

Write down application of Autoradiography technique.

4. Explain the principle of chromatography.

Or

Describe the types of chromatography technique.

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