

Seat No. : \_\_\_\_\_

**MU-113**

**March-2019**

**B.Sc., Sem.-IV**

**CC-204 : Biochemistry**

**Time : 2:30 Hours]**

**[Max. Marks : 70**

1. (A) Discuss principle, construction, working, specimen preparation & uses of TEM in detail. **14**

**OR**

- (i) List differences between Light Microscope & Electron Microscope **7**
- (ii) Explain Resolving power & Numerical aperture of a microscope. **7**
- (B) Attempt Any **four** : **4**
  - (1) Give two uses of Fluorescent microscope.
  - (2) What are the two limitations of Dark field microscope ?
  - (3) What is the function of Objective lens ?
  - (4) Name any two examples of Fluorochromes.
  - (5) Give two important differences between TEM & SEM.
  - (6) Define Magnification.

2. (A) List the different types of Rotors & discuss any two. **14**

**OR**

- (i) Discuss the principle behind Centrifugation technique. **7**
- (ii) Discuss how to prepare a gradient in the centrifuge tube for Density Gradient Centrifuge. **7**
- (B) Attempt any **four** : **4**
  - (1) Define Sedimentation Coefficient
  - (2) What is Svedberg unit ?
  - (3) Which Centrifugation technique will you use for separating organelles from rat liver cells ?
  - (4) What is the full form of RCF ?
  - (5) Give two uses of Centrifugation technique.
  - (6) List two precautions while handling a Centrifuge.

3. (A) Discuss the applications of Radioisotopes in Biological Sciences. 14

**OR**

- (i) Explain the measurement of radioactivity by liquid Scintillation counter. 7  
(ii) Write a note on Autoradiography & its applications. 7  
(B) Attempt any **three** : 3  
(1) Define Curie.  
(2) Name any two radioisotopes.  
(3) Mention two hazards of radioisotopes.  
(4) Define radioactive Decay.  
(5) What is the use of GM counter ?

4. (A) Discuss the following in brief : 14

- (1) Histogram  
(2) Frequency polygon  
(3) Pie chart  
(4) Tabulation of Data

**OR**

- (i) Explain normal distribution curve. 7  
(ii) Calculate Mean deviation from the following data in continuous series : 7

CI	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9
Frequency	13	06	08	11	12

- (B) Attempt any **three** : 3  
(1) Define Median.  
(2) State two merits of mean.  
(3) Write formula to calculate standard deviation.  
(4) What is coefficient of variance ?  
(5) What is primary data ?
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