

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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