

M.Sc. F.Y. (Microbiology) (CBCS Pattern) Semester - II  
**PSMBT-105 - Paper-I : Advance Techniques in Microbiology**

P. Pages : 1

Time : Three Hours



**GUG/S/23/11216**

Max. Marks : 80

- 
- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw a diagram wherever necessary.

**1.** Explain in detail different types of centrifugation techniques. **16**

**OR**

- a) Explain CD/ORD method. **8**  
b) Determination of molecular weight of macromolecule by viscosity method. **8**

**2.** Explain the working mechanism of SDS-PAGE electrophoresis? **16**

**OR**

- a) Two-dimensional electrophoresis. **8**  
b) Immuno-electrophoresis. **8**

**3.** Explain in detail the working principle and mechanism of image generation in confocal microscopy. **16**

**OR**

- a) Scanning electron microscope. **8**  
b) What is Immunoelectron microscopy. **8**

**4.** Explain NMR and its biological significance. **16**

**OR**

- a) Southern blotting technique. **8**  
b) Site directed mutagenesis. **8**

**5.** Write short note on:

- a) Structure determination by Light scattering. **4**  
b) Agarose gel electrophoresis. **4**  
c) Cryo-electron microscopy. **4**  
d) Radioimmunoassay. **4**

\*\*\*\*\*