

M.Sc.(Microbiology) (CBCS Pattern) Second Semester CBCS  
**PSMBT-107 - Paper-III: Microbial Methods for Environmental Management  
(MMEM)**

P. Pages : 1

Time : Three Hours



**GUG/W/18/11218**

Max. Marks : 80

Notes : 1. All the questions are compulsory and carry equal marks.

1. Describe the microbial changes induced by organic and inorganic pollutants during eutrophication. **16**

**OR**

Describe:

- a) Biodeterioration of pharmaceutical products. **8**
- b) Biomagnification of chlorinated hydrocarbons. **8**

2. Describe the biotransformation of metals and metalloids. **16**

**OR**

Write note on followings.

- a) Biodegradation of plastics. **8**
- b) Bioleaching of copper. **8**

3. Describe the followings.

- a) Activated Sludge Process. **8**
- b) Trickling filter. **8**

**OR**

Write note on followings:

- a) Aerated lagoons. **8**
- b) Fluidized bed reactor. **8**

4. Discuss the biotechnological approaches for management of Global environment problems. **16**

**OR**

Write note on followings.

- a) Global Warming. **8**
- b) Acid mine drainage. **8**

5. Write short note on followings.

- a) Control of eutrophication. **4**
- b) Application of bioleaching. **4**
- c) Phytoremediation. **4**
- d) Acid rain. **4**

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