



Seat No. : _____

NG-140
November-2025
M.Sc., Sem.-III
MIC-502 : Microbiology
(Environment Microbiology)

Time : 2:30 Hours]

[Max. Marks : 70

1. Write a note on salient features of Environment Protection Act-1986. 14

OR

1. (A) Describe selection criteria for Bioindicators and explain terrestrial invertebrates as bio-indicators. 7

1. (B) Write a note on Biomarkers and its objectives. 7

2. Describe the physical and chemical characterization of waste water. 14

OR

2. (A) Write a short note on 'Activated sludge processes'. 7

2. (B) Describe the anaerobic processes for waste treatment. 7

3. Describe the mechanisms involved in azo dye degradation, including the roles of bacteria and enzymes. 14

OR

3. (A) Write a note on degradation of aliphatic saturated linear and cyclic hydrocarbons. 7

3. (B) Explain the degradation of Aromatic Hydrocarbons. 7

4. Write a note on Biodeterioration of textiles. 14

OR

4. (A) Define biodeterioration and discuss the mechanisms by which microbes deteriorate materials. 7

4. (B) Explain the strategies for prevention and control of biodeterioration in food, paper, and building materials. 7

5. Write the answer in brief : (any seven)

- (1) What is LD_{50} ?
 - (2) What is high dose and low dose in chronic toxicity testing ?
 - (3) Who is father of modern toxicology ?
 - (4) What are CYPs ?
 - (5) Give the full name of pesticide 2, 4-D and draw its structure.
 - (6) What is catenation ?
 - (7) What is BOD and what is its signification ?
 - (8) Explain ThOD.
 - (9) What is Fluidized bed reactor and mention its use.
 - (10) Define Assimilatory biodeterioration.
 - (11) What is biophysical biodeterioration ?
 - (12) Biofilm formation in biodeterioration.
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