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Total No. of Pages : 01

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M.Tech.(Bio Tech.)EL-II(2018 Batch) (Sem.-1)

**ENVIRONMENTAL ENGINEERING AND WASTE MANAGEMENT**

Subject Code : MTBT-109-18

M.Code : 75769

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.

2. Each question carries TWELVE marks.

- Q1. a) Write in detail the sources of air pollution and their dispersion in the environment. 6  
b) What are the common air pollution control technologies available? Discuss **any two**. 6
- Q2. a) Define water pollution. What are the characteristics of effluents which needs reduction to get standard effluent? 6  
b) Describe the strategies to treat waste water. 6
- Q3. a) How solid waste disposal can be achieved? Give its types and their methods of disposal. 6  
b) Describe the principal and working mechanism of bag filters, Wet scrubbers and centrifugal collectors. 6
- Q4. a) Write in detail the water quality modeling for streams. 6  
b) What are waste recovery systems? How they are useful in waste management? 6
- Q5. a) Describe the production of various biofuels using microbes commercially. 6  
b) What is bioremediation? Discuss its applications for sustaining the environment. 6
- Q6. a) Write the methods adopted for hospital waste management in detail. 6  
b) How microbes are applied for degradation of hydrocarbons? 6
- Q7. a) Give comparison of primary, secondary and tertiary treatment methods of waste water. 6  
b) Describe the sources of water pollution and the strategies for their control. 6
- Q8. Write notes on the following :  
a) Microbes for replenishing energy in the environment. 6  
b) Biofilter technology and its applications. 6

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**