

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BE
BRANCH: BIOTECHNOLOGY

SEMESTER : VII
SESSION : MO/19

SUBJECT: BT7021 BIOLOGICAL WASTE MANAGEMENT

TIME:

FULL MARKS: 60

INSTRUCTIONS:

1. The question paper contains 7 questions each of 12 marks and total 84 marks.
 2. Candidates may attempt any 5 questions maximum of 60 marks.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Define BOD. [2]
Q.1(b) Enumerate the physical characteristics of the waste water. [4]
Q.1(c) What do you mean by waste water management? Discuss the steps involved in the waste water management. [6]
- Q.2(a) What do understand by the term Screening? [2]
Q.2(b) Discuss communitor with the help of a diagram. [4]
Q.2(c) Describe the problems caused by the fats oil and grease in the waste water and the ways to treat them. [6]
- Q.3(a) Define lagoons. [2]
Q.3(b) Discuss the activated sludge process. [4]
Q.3(c) Describe Rotating Biological Contractor. Give it's advantages and disadvantages. [6]
- Q.4(a) What do you mean by fermentative bacteria? [2]
Q.4(b) Discuss the factors affecting anaerobic process of waste water treatment. [4]
Q.4(c) With the help of a neat diagram describe the fluidized bed reactor in detail. [6]
- Q.5(a) What are the contaminants removed during the tertiary treatment? [2]
Q.5(b) What is meant by nitrogen removal? How is it done? [4]
Q.5(c) What do you mean by disinfection in the perspective of tertiary treatment of waste water? Discuss the process of disinfection. [6]
- Q.6(a) What are the basic principles of solid waste management? [2]
Q.6(b) Discuss the properties of solid wastes. [4]
Q.6(c) Describe the functional elements or steps involved in the solid waste management. [6]
- Q.7(a) What are the factors that must be considered while designing anaerobic digesters? [2]
Q.7(b) What is meant by plant layout and what are the principles to be considered during plant design? [4]
Q.7(c) Discuss the Layout and Design of Municipal Sewers. [6]

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