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Total Pages : 3

Roll No.

ES-553

Water and Waste water Treatment Technologies

M.Sc. Environment Science (MSCES-19)

2nd Year Examination, 2021 (Winter)

Time : 2 Hours]

Max. Marks : 80

Note : This paper is of Eighty (80) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Twenty (20) marks each. Learners are required to answer any Two (02) questions only.

(2×20=40)

- 1.** What is aeration ? Explain its theory and limitations. Also discuss the designs of aerators.

2. What is filtration ? Discuss the theory of filtration and also discuss about the classification of rapid sand filters.
3. What do you understand by disinfection of water? Explain the various types of disinfection and also discuss the process of chlorination.
4. What are the characteristics of industrial waste? Discuss industrial waste treatment process. Also discuss industrial waste treatment of textile and paper-pulp industries.
5. Discuss primary and secondary sewage treatments alongwith their advantages and disadvantages in detail.

SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Ten (10) marks each. Learners are required to answer any Four (04) questions only. (4×10=40)

1. Explain nitrogen and phosphorus removal from waste water.
2. Discuss biological systems for deodourization of water.
3. What is activated carbon treatment? Discuss.
4. Discuss in brief sludge treatment processes.

5. Explain microbiological metabolism in aquatic environment.
 6. Discuss toxic substances in industrial waste water.
 7. Briefly discuss about septic tank, its advantages and disadvantages.
 8. Discuss the methods of solid waste disposal.
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