

Total No. of Questions: 09

**B.Tech. (CE) (2011 Onwards) (Sem. – 6)
ENVIRONMENTAL ENGINEERING- II**

M Code: 71087

Subject Code: BTCE-606

Paper ID: [A2293]

Time: 3 Hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION A

1. a) Differentiate between separate sewer system and combined sewer system.
b) What is meant by high rate trickling filter?
c) What is meant by theory of filtration?
d) Define design period?
e) Mention the objective of sewage treatment.
f) Define BOD?
g) Enlist the merits of Sewage system.
h) Why ventilation of sewer is important?
i) Define F/M ratio?
j) List the factors of affecting coagulation.

SECTION B

2. Explain with a neat flow diagram about the principle involved in activated sludge process.
3. What are the objectives of primary sewage? Explain about primary treatment units of sewage.
4. Describe the working principle of Imhoff tank with neat sketch.
5. Design the oxidation pond for treating sewage from a hot climate residential colony with 5000 persons contributing sewage at 150 lpcd. Make suitable assumptions wherever needed.
6. What is the function of grit chamber? what are the major design criteria governing the design of grit chamber.

SECTION C

7. Design an Imhoff tank to treat sewage from small town with 30000 populations. The rate of sewage may be assumed as 150 lpcd. Make suitable assumptions wherever needed. Draw neat sketch.
8. Explain with neat sketch about oxidation pond and macrophyte ponds.
9. Write short note on:
 - a) Floatation units
 - b) Disinfection
 - c) Storm water flow