III B. Tech I Semester Regular Examinations, February-2022
ENVIRONMENTAL ENGINEERING – II
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I
1. a) Describe the conservancy and water-carriage system of sanitation. [8M]
   b) State the merits and demerits of water-carriage system. [7M]

(OR)

2. a) What are the sources of sanitary sewage? What factors affect the quantity of sanitary sewage? [8M]
   b) Describe the method of estimating sanitary sewage of a city in detail. [7M]

UNIT-II
3. a) Under what circumstances, it becomes necessary to pump the sewage? [8M]
   b) Write a note on air lift pump with a neat sketch. [7M]

(OR)

4. a) With the help of neat diagrams, describe the construction and functioning of water closets. [8M]
   b) With the help of a neat diagram, describe the flushing cisterns. [7M]

UNIT-III
5. a) What are the characteristics of sewage? How various constituents of sewage influence these characteristics? [8M]
   b) A sewage sample is found to have a BOD_5 of 250 mg/l. If the rate constant is 0.15/d, estimate ultimate carbonaceous BOD of sewage. [7M]

(OR)

6. a) With a neat diagram explain the actions involved in self purification of streams (Oxygen Sag Curve). [8M]
   b) Explain why BOD test is to be conducted for waste waters. [7M]

UNIT-IV
7. a) What are the major types and sources of grit in municipal wastewater? Describe treatment methods used to remove grit. [8M]
   b) With the help of a neat diagram, explain the construction and working of Trickling Filter. [7M]

(OR)

8. a) Why it is necessary to remove oils, grease and fats from the sewage? [8M]
   b) Explain various aeration practices in Activated Sludge Process. [7M]

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UNIT-V

9. a)　With a neat diagram explain the working of UASB.　　　　　[8M]
    b)　Explain the process involved in two-stage sludge digester.　　　[7M]

(OR)

10 a)　Design a septic tank for a population of 300. Assume the [8M]
    necessary data.
    b)　Explain the process involved in sludge drying beds.　　　　[7M]

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