QP Code : 29685

(3 Hours)   [Total Marks : 100

N. B. :   (1)   Question No. 1 is **compulsory**.

        (2)   Answer any **four** questions out of remaining **six** questions.

1.   (a)   Explain the air pollution effects on human health.   5
    (b)   What is noise pollution? How do you control the noise pollution?   5
    (c)   Define BOD? Explain the significance of BOD/COD ratio.   5
    (d)   Explain attached growth process & suspended growth process & give exmaples.   5

2.   Write short notes on any **four** :–   20
        (a)   Ozone depletion
        (b)   Pumping station
        (c)   Sewage farming
        (d)   Imhoff tank
        (e)   Sanitory fixtures & fittings

3.   (a)   Explain the detailed classification of air pollutants.   10
    (b)   What are the various materials used for the sewers. Explain the merits & demerits.   10

4.   (a)   Explain with neat flow sheet treatment given to the domestic sewage wherein the treated sewage is likely to be disposed in the river.   10
    (b)   Determine ultimate BOD for a sewage having 5 day BOD at 20° C as 180 mg/lit. Assume the base 10 rate constant k = 0.1/day   6
    (c)   Explain self purification of stream   4

5.   (a)   What are the operational troubles found in the activated sludge process.   6
    (b)   Why velocity needs to be controlled in the grit chamber.   4
    (c)   Why sewer appurtenances are required. Enlist & explain any 2 with neat sketch.   10

6.   (a)   Draw a neat sketch of sludge digestion tank & explain the digestion process.   10

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(b) Determine the dimensions of a high rate Trickling filter for the following   **10**
data.

      (i)   Sewage flow = 3 mld

      (ii) Recirculation ratio = 1.5

      (iii) BOD of raw sewage = 250 mg/lit

      (iv) BOD removed in primary tank = 25%

      (v) Final effluent desired = 30 mg/lit

7. (a) Design a septic tank for a small colony of 200 persons provided with   **10**
a water supply of 200 lit/person/day, assume any data required.

  (b) Write a note on oxidation pond.   **5**

  (c) Differentiate between aerobic anarobic decomposition.   **5**

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