Total No. of Questions : 10]

SEAT No. :

P2545

[Total No. of Pages : 3

[5153]-510
T.E.(Civil)
ENVIRONMENTAL ENGINEERING-I
(2012 Pattern) (Semester-II) (End Sem.)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables are allowed.***
5) ***Assume Suitable data, if necessary.***

Q1) a) Explain in short different methods for removing particulate matters. **[6]**

b) Discuss the sources and effects of noise pollution. **[4]**

OR

Q2) a) Convert the following sound pressure into decibel units. **[6]**

i) P = 0.0002 microbar

ii) P = 0.2 microbar

iii) P = 20,000 microbar

b) Explain the factors affecting the rate of demand. **[4]**

Q3) a) Explain with neat sketch the working, location and function of river and canal intake. **[6]**

b) Write a brief note on Aeration in water treatment. **[4]**

OR

P.T.O.

Q4) a) Explain type I and type II settling. What are the various types of plain sedimentation basins? Explain any one type of basin with a neat sketch. **[6]**

b) On what factors the dose of coagulants depends? How the optimum coagulant dose is determined? **[4]**

Q5) a) Alum dose of 20 mg/lit is applied to treat 15 MLD of water. Find **[6]**

i) Quantity of alum required per day and

ii) Amount of CO_2 released.

b) Compare slow sand and rapid sand filter with reference to **[10]**

i) Rate of filtration,

ii) Filter media- Effective size and uniformity coefficient of sand,

iii) Period and method of cleaning,

iv) Loss of head and

v) Quantity of wash water.

OR

Q6) a) Explain in detail, the working of a circular clariflocculator. Draw the typical cross-section of a circular clariflocculator, showing various components. **[8]**

b) Write a note on: **[8]**

i) Roughening filter and double filtration

ii) Multimedia and dual media filters

Q7) a) What are the functions of Elevated Service Reservoir? Draw a sketch of intze type tank. **[8]**

b) What is desalination? What are the different methods? **[8]**

OR

Q8) a) Write short note on: **[10]**

i) Chloramines

ii) Effect of pH on chlorination

iii) plain chlorination

iv) Post chlorination

v) Super chlorination

b) Write a short note on fluoridation and defluoridation. **[6]**

Q9) a) Write a short note on: **[9]**

i) Mass curve method

ii) Capacity of service reservoir.

b) Differentiate between fire reserve and break down reserve. **[9]**

OR

Q10)a) What is packaged water treatment plant? What are the advantages of packaged water treatment plant? **[9]**

b) Explain zeolite process in detail with a neat sketch. **[9]**