

Total No. of Questions : 10]

SEAT No. :

P2545**[5153]-510**

[Total No. of Pages : 3

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) $P = 0.0002$ microbarii) $P = 0.2$ microbariii) $P = 20,000$ microbarb) 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 CO₂ 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

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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]

