

Total No. of Questions : 10]

SEAT No. :

P3566

[5560]-510

[Total No. of Pages : 3

T.E. (Civil Engineering)

ENVIRONMENTAL ENGINEERING - I

(2015 Pattern) (End Sem.) (301011) (Semester - II)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answer any 7 questions.*
- 2) *Figures to the right indicate full marks.*
- 3) *Your answer will be valued as a whole.*
- 4) *Assume suitable data, if necessary.*

Q1) a) Determine equivalent noise level for the following noise level measurements in premises. **[5]**

Time	4.30 am- 6.30 am	6.30 am- 8.30 am	8.30 am- 10.30 am	10.30 am- 12.30 pm	12.30 pm- 2.30 pm	2.30 pm- 4.30 pm
Sound in (dB)	44	53	67	72	68	56

- b) Give note on followings: **[2+3]**
- i) Stable Atmosphere.
 - ii) Plume Behavior

Q2) a) What is per capita demand? Give the water requirement for average Indian town on per capita basis. **[6]**

- b) Forecast the population for the year 1961 & year 1971 from following census data by Arithmetical Increase method. **[4]**

Census Year	1931	1941	1951
Population	35000	36500	37650

Q3) a) A settling tank is designed for an overflow rate of 5000 lit/m²/hr. What percentage of particles of diameter (i) 0.08mm and (ii) 0.04mm will be removed in this tank? Assume suitable data. **[6]**

- b) Enlist the types of Aerators. And explain in details any one from it. **[4]**

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- Q4) a)** Explain the following terms: [5]
i) Coagulation.
ii) Surface overflow rate.
iii) Flocculator.
- b)** With neat sketch explain the components of Rapid sand Filter and the step by step procedure of back washing. [5]
- Q5) a)** What is meant by Coagulation? Explain any one coagulant along with chemical reactions. [3]
- b)** Discuss the followings: [3]
i) Detention Period.
ii) Surface Loading.
- c)** Explain how plain sedimentation is differing than sedimentation with coagulation. [4]
- Q6) a)** Calculate the amount of bleaching powder required in kg per day for 10 MLD of water. The filtered water exerts a chlorine demand of 0.6 mg/lit to leave residual chlorine of 0.2 mg/lit. Chlorine available from bleaching powder is 40% [5]
- b)** Discuss in detail about Lime soda process and Ion exchange process. [5]
- Q7) a)** Explain in detail about Chlorine Ammonia treatment and state its merits. [5]
- b)** Explain about followings: [5]
i) Sources of Fluorides.
ii) Electrodialysis.
- Q8) a)** Discuss the followings: [5]
i) Break Point Chlorination.
ii) Methods of disinfection.
- b)** With suitable sketch explain about Solar distillation technique. [5]

Q9) a) Tabulate the comparison of Continuous and intermittent system of water supply. **[5]**

b) Explain any three methods of Rain water harvesting. **[5]**

Q10)a) Discuss the following. **[2+2+2]**

i) Pressure in distribution system.

ii) Radial system of water distribution.

iii) Water leakage detection techniques.

b) Discuss the points on which total capacity of reservoir is depends. **[4]**
