Total No. of Questions : 10]

SEAT No. :

P3566

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[5560]-510

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 setting tank is designed for an overflow rate of 5000 lit/m^2/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]**

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