Total No. of Questions : 6]

SEAT No. :

P1435

[Total No. of Pages : 2

TE/Insem/APR-105
T.E. (Civil)
ENVIRONMENTAL ENGINEERING - I
(2015 Pattern) (Semester - II)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates :

1) ***Answer Q.1 or 2, Q.3 or 4, Q.5 or 6.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***
5) ***Use of Scientific calculator is allowed.***

Q1) a) Convert the following sound pressures into decibel units: **[5]**

i) P = 0.6microbars
ii) P = 60 microbars
iii) P = 0.0006 microbars
iv) P = 6000 microbars
v) P = 0.06 microbars

b) Enlist any 4 equipments used for collecting particulate matter. Explain with neat sketch - Settling Chamber. **[2+2+1]**

OR

Q2) a) Calculate resultant noise level produced in workshop having 15 machines and each machine producing noise of 75 dB. **[5]**

b) Define municipal solid waste management. Explain with neat sketch anaerobic digestion process for management of MSW. **[5]**

Q3) a) Draw the flow sheet of water supply scheme considering river as source. Explain function of each unit. **[6]**

b) State the HDL and MPL values as per IS:10500 for drinking water with appropriate unit, for following parameters: **[4]**

i) pH ii) Total Alkalinity
iii) Chlorides iv) Nitrates

OR

P.T.O.

Q4) a) Census data for a town is as follows: **[6]**

Year	1971	1981	1991	2001	2011
Population	20000	27000	33000	41000	50000

Estimate the population in the year 2051 by geometric increase method.

b) Explain the following terms: **[4]**

i) Detention Time,
ii) Design Period,
iii) Average Water Demand and
iv) Peak Water Demand

Q5) a) Explain with neat sketch, working of a tube settler. **[3+1]**

b) The maximum daily demand of water for a town is 125 MLD. Design Cascade aerator considering loading rate as 0.03 $m^2/m^3/hr$. Assume velocity of flow in collecting channel is 1m/sec. **[6]**

OR

Q6) a) Design a rectangular sedimentation tanks, which supplies 1 MLD water to the Town. The sedimentation period is 3 hrs. The velocity of flow is 12 cm/min. Depth of water in a tank is 3.5 m. **[5]**

b) Draw a flow sheet of conventional WTP in urban areas. Explain each unit in brief. **[5]**