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CODE NO:- U-02

FACULTY OF ENGINEERING

Third Engg Examination

DECEMBER 2014

Environmental Engineering-I

TE CIVIL(Revised)

[Time: THREE Hours] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

N.B
1) Attempt any three questions from each section.
2) Figures to the right indicate full marks.
3) Draw neat & labeled diagram wherever necessary.
4) Assume suitable data if necessary.

SECTION A

Q.1	A	Define air pollution and differentiate between natural and manmade air pollutions.	06
	B	Enumerate and describe in brief the various types of engineering devices that are used to control the emissions of gaseous air pollutants from industries.	08
Q.2	A	Name the major and significant minor constituents of the atmosphere with their approximate percentage by volume.	07
	B	Explain stable and unstable atmosphere and inversion of the atmosphere	06
Q.3	A	An industry utilizes 0.3 Ml of oil fuel per month. It has also been estimated that for every 1 Ml of fuel oil bunt in the factory , per year, the quantities of various pollutants emitted are given as : particulate matter =2.9t/yr, SO2=60t/yr, Nox 8t/yr, HC=0.4t/yr, CO = 0.5t/yr. calculate the height of the chimney required to be provided for safe dispersion of the pollutants.	07
	B	What is photo chemical smog and how is it formed.	06
Q.4	A	How and which of the air pollutant advisory affect the plant and animal life on earth.	07
	B	What are the sources of smoke and its measurement	06
Q.5		Write short notes on	
	A	Air quality standards? Emission standards	05
	B	Environmental import assessment	04
	C	Control techniques for spm	04

SECTION B

Q.6	A	Explain functions of the various units provided for water treatment plant with the help of neat diagram	06
	B	Enlist population fore casting method and describe any one method	08

Q.7	A	The maximum daily demand at a water purification plant has been estimated as 12 million liters per day. Design the dimensions of a suitable sedimentation tank for the raw supplies, assuming a detention period of 6 hrs and the velocity of flow as 20 cm/mm.	07
	B	What are the merits and demerits of rapid sand filter as compared with slow sand filter	06
Q.8	A	Write the standard for potable water for the following: Turbidity, P^{++}, Hardness Fluorides, Iron and manganese, B-cali Index.	06
	B	Design rapid sand filters for treating water required for a population of 50,000. The rate of supply being 180 liters / day/ person. The filters are rated to work 5000 liters/hr/m2 assume whatever data are necessary.	07
Q.9	A	What do you mean by disinfection? What is meant by super chlorination	06
	B	Classify various types of filters. Differentiate between the slow sand and rapid sand filter gravity type.	07
Q.10		Write short notes on [any three]	
	A	Water aeration	13
	B	Water borne diseases	
	C	Grand water recharge	
	D	Clarifloculator.	