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Paper Code: U359-112(T1)

OCTOBER 2019/ INSEM (T1)

T. Y. B. TECH. (Civil Engineering) (SEMESTER - I)

COURSE NAME: Environmental Engineering-I

COURSE CODE: CVUA31172

(PATTERN 2017)

Time: [1 Hour]

[Max. Marks: 30]

Instructions to candidates:

- 1) Answer Q.1 OR Q.2 and Q.3 OR Q.4.
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed
- 4) Use suitable data where ever required

Q.1 a) State the various controlling devices for particulate matter. Explain any one in details. [6 marks]

b) A fabric filter is to be constructed using bags that are 0.25m in diameter and 5.5m long. The baghouse is to receive $9\text{ m}^3/\text{s}$ of air and appropriate filtering velocity has been determined to be $1.8\text{ m}/\text{min}$.

Determine- (i) Cloth Area Required

(ii) Number of bags required for continuously cleaned operation.

[6 marks]

c) Explain the following terms in brief.

- (i) Sound Pressure Level
- (ii) Sound Power Level
- (iii) Sound Intensity Level
- (iv) Threshold of hearing

[4 marks]

OR

Q.2 a) State the various controlling devices for gaseous pollution. Explain any one in detail. [6 marks]

b) Analyze the sound pressure levels resulting from combining two sound levels 50 dB and 50 dB. [6 marks]

c) Explain various techniques used to control Noise Pollution with respect to Source, Transmission and Receivers end. [4 marks]

Q.3 a) Estimate forecast population by 2011 and 2021 with following data from census report.

Year	1961	1971	1981	1991	2001
Population	25000	28000	32000	40000	49000

Use Incremental Increase Method. [6 marks]

b) State the various characteristics of solid Waste. [4 marks]

c) What are the factors affecting generation of Solid Waste. [4 marks]

OR

Q.4 a) The population of 5 decades from 1950 to 1990 are given below. Find out the population after one, two and three decades beyond the last known decade, by using Arithmetic Increase Method. Also find out the solid waste generation at the end of third decade for a Metro city. [6 marks]

Year	1950	1960	1970	1980	1990
Population	25000	28000	34000	42000	47000

b) Explain the components of Municipal Solid Waste. [4 marks]

c) State the various disposal methods of Solid Waste. Explain any one in detail. [4 marks]