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**T.E (Civil) (Semester-VI) (RC 2019-20)
EXAMINATION JULY 2022
Air and Noise Pollution Control**

[Total Marks : 100]

[Duration : Three Hours]

Instructions:

- i) Marks are indicated to the right of the question.
- ii) Each question is of total 20 marks.
- iii) Answer total 5 questions, 2 questions from Part A, 2 questions from Part B and 1 question from Part C.
- iv) Assume any additional data if required and mention it clearly.

Part A

- | | | |
|-----|---|----|
| Q.1 | a) Define air pollution in general and also as per Engineers Joint Council USA, Indian Standard Institution, American Medical Council | 10 |
| | b) Differentiate between the primary pollutant and secondary pollutant. | 06 |
| | c) Define the following terms
i) Aerosols ii) Mists | 04 |
| Q.2 | a) Describe the mechanism of action of air pollutants on humans along with neat diagram and also health effects on humans. | 12 |
| | b) Describe acid rains and its effects on environment. | 08 |
| Q.3 | a) Describe all types of plume behavior along with neat diagram with all technical details. | 10 |
| | b) Explain the role of meteorological elements in the dispersion in the dispersion of air pollutants in the atmosphere along with neat diagram. | 10 |

Part B

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|-----|---|----|
| Q.4 | a) What are the objectives of using control equipment? What are the main principles of air pollution abatement? | 12 |
| | b) A factory uses 400000 litres of furnace oil Specific Density 0.97 per month. If for one litres of oil used per year, the Particulate matter emitted is 4.0 tonnes per year, SO ₂ emitted is 59.7 tonnes per year, NO ₂ emitted is 7.5 tonnes per year, HC emitted is 0.37 tonnes per year and CO emitted is 0.52 tonnes per year. Calculate the height of Chimney required to be provided for safe dispersion of the pollutants. | 08 |
| Q.5 | a) Describe the electrostatic precipitators (ESP) along with neat diagram and what are its advantages and disadvantages? | 12 |
| | b) Describe the effects of noise pollution on health and Indian noise standards and acceptable noise levels as per Indian Standard. | 08 |

- Q.6 a) Describe the wet collectors along with neat diagram and what are its advantages and disadvantages? 12
- b) What are the acceptable noise levels of outdoor and Indoor noise levels as per Indian standard. 08

Part C

- Q.7 a) Explain the theory of formation of photochemical smog and what are its effects on environment? 10
- * b) Describe the Greenhouse effects along with neat diagram and impact of greenhouse effect on environment 10
- Q.8 Write short notes on the following
- i) Settling chamber 06
 - ii) Laboratory analytical methods of particulate concentration 07
 - iii) Ambient Air Quality Standards 07