

**R16**

Code No: 136AB

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, May - 2019**

**AIR POLLUTION AND CONTROL**  
(Civil Engineering)

Time: 3 hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A**

(25 Marks)

- 1.a) What is Bhopal gas tragedy? [2]
- b) What are the primary and secondary pollutants? [3]
- c) What are the chemicals responsible for Ozone hole? [2]
- d) What is green house effect? [3]
- e) Draw the structure of the atmosphere along with its components. [2]
- f) What is wind rose diagram? [3]
- g) What is lapse rate? [2]
- h) What are the equipment's available for particulate matter control? [3]
- i) Give the ambient air quality standards. [2]
- j) What are the methods available for NO<sub>x</sub> control? [3]

**PART - B**

(50 Marks)

- 2.a) How the photochemical smog forms. Explain with chemical equations.
- b) Explain the formation of acid rains along with chemical equations. [5+5]

**OR**

- 3.a) Discuss about London smog episode.
- b) Discuss about natural and artificial classification of air pollutants. [5+5]

- 4.a) What are the precursors for ozone hole formation and why ozone hole forms in springs and not in winter.
- b) What is heat island effect? [5+5]

**OR**

- 5.a) Write the effects of green house effect.
- b) What are the impacts of ozone hole? [5+5]

- 6.a) What happens to the CO concentration when oxygen concentration and temperature increases in the combustion process.
- b) How the meteorology plays a major role in plume dispersion. [5+5]

**OR**

- 7.a) Discuss about the dry adiabatic and wet adiabatic lapse rates.
- b) What is environmental lapse rate? [5+5]

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- 8.a) Explain about the Gaussian model equation. [5+5]  
b) What are the different techniques are available for particulate matter control. [5+5]

OR

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9.a) How to design the bag filters. [5+5]  
b) Explain about electrostatic precipitator with neat diagram. [5+5]

- 10.a) How to reduce the SO<sub>x</sub> emissions from industrial flue gasses. [5+5]  
b) Explain about ambient air pollution monitoring technique. [5+5]

OR

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11.a) What is stack monitoring and how to carry out these studies. [5+5]  
b) Explain about the high-volume air sampler operation. [5+5]

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