



Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY  
B.Tech Degree S8 (R,S)(FT/WP) Examinations April 2026 (2019 Scheme)

**Course Code: CET464**  
**Course Name: AIR QUALITY MANAGEMENT**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |    |   |     |
|----|---|-----|
| 1  | Define the term environment and list its main components?   | (3) |
| 2  | Give an example of a historical air pollution episode and its impact.                                 | (3) |
| 3  | Describe the effects of air pollutants on human health.   | (3) |
| 4  | Explain the greenhouse effect?  | (3) |
| 5  | Explain the relationship between temperature and pressure in the context of air pollutant dispersion. | (3) |
| 6  | Explain atmospheric stability and its role in air pollutant dispersion?                               | (3) |
| 7  | Discuss about Grab Sampling.  | (3) |
| 8  | What is Air Quality Index (AQI), and how is it used to assess air pollution levels?                   | (3) |
| 9  | Explain the working of cyclone separator. ?   | (3) |
| 10 | Discuss the working of centrifugal scrubber in air pollution control.                                 | (3) |

**PART B**

*Answer any one full question from each module, each carries 14 marks.*

**Module I**

- |    |  |     |
|----|--|-----|
| 11 | a) Identify the major sources of air pollution with relevant examples.   | (6) |
|    | b) Discuss how industrial processes contribute to air pollution and the potential solutions to reduce emissions. | (8) |

**OR**

- |    |   |     |
|----|---|-----|
| 12 | a) What are criteria pollutants? Discuss their major sources and the health effects associated with each. | (7) |
|    | b) What are the biotic and abiotic components of the environment, and how do they interact?               | (7) |

**Module II**

- |    |   |      |
|----|---|------|
| 13 | Examine the effects of air pollutants on animals and materials. | (14) |
|----|---|------|

OR

14 a) What is indoor air pollution, and what are its primary sources? Discuss its adverse effects on human health. (8)

b) Explain the sources and effects of oxides of nitrogen. (6)

**Module III**

15 a) How do Pasquill's stability curves help in studying air pollution dispersion? (4)

b) Explain the phenomenon of atmospheric inversion and its effects on the dispersion of air pollutants. (10)

OR

16 Classify the different types of plume behavior in air pollution dispersion. Explain any four types with suitable diagrams. (14)

**Module IV**

17 Mention different methods used for sampling particulate matter pollutants. Describe the working of any two in detail. (14)

OR

18 a) What is an emission inventory, and how does it contribute to effective air quality management? (6)

b) Discuss the National Ambient Air Quality Standards (NAAQS) and outline the prescribed limits for any six major air pollutants. (8)

**Module V**

19 What are the natural methods used for air pollution control? Also explain the source correction methods for controlling air pollution. (14)

OR

20 a) Describe the principles of operation, advantages and disadvantages of electrostatic precipitators for particulate emission control (9)

b) Explain the working principle of a gravitational settling chamber in air pollution control. (5)

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