

B

0400CET464052401



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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S8 (R,S) / S6 (PT) (R,S) Examination May 2024 (2019 Scheme)

**Course Code: CET464**

**Course Name: AIRQUALITY MANAGEMENT**

**Max. Marks: 100**

**Duration: 3 Hours**

**PART A**

*Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | Distinguish between primary and secondary air pollutants.                    | (3) |
| 2  | Enlist criteria air pollutants?  | (3) |
| 3  | What is acid rain? How do air pollution lead to the formation of it?         | (3) |
| 4  | Describe the effects of air pollution on vegetation.                         | (3) |
| 5  | List the meteorological factors that influence the air pollutant dispersion. | (3) |
| 6  | Define isokinetic sampling and its significance.                             | (3) |
| 7  | Justify the need of setting ambient air quality monitoring.                  | (3) |
| 8  | How is Grab sampling done in air pollution monitoring?                       | (3) |
| 9  | Write a note on combustion as air pollution control method.                  | (3) |
| 10 | Illustrate the working of cyclone separator.                                 | (3) |

**PART B**

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

**Module I**

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|----|---|-----|
| 11 | a) Define air pollution. Discuss any three classification of air pollutants.                                    | (8) |
|    | b) Discuss the London Smog episode with special reference to its cause, atmospheric conditions and its impacts. | (6) |

**OR**

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|----|---|------|
| 12 | a) Enlist any six major air pollution episodes and explain the background and impacts of any three of them. | (14) |
|----|---|------|

**Module II**

- |    |   |      |
|----|---|------|
| 13 | a) Compare the sources and effects of Carbon monoxide and particulate matter in the ambient air | (14) |
|----|---|------|

**OR**

- |    |   |     |
|----|---|-----|
| 14 | a) With suitable examples, explain how air pollutants affect materials. | (6) |
|    | b) What are the sources and effects of Indoor air pollution.            | (8) |

**Module III**

- 15 a) Enlist the assumptions and limitations of Gaussian Plume Model. Also Write (9)  
down the expression for evaluating pollutant concentration at a given location  
from the source.
- b) Discuss application of Pasquill's stability curves in air pollution dispersion (5)  
studies.

**OR**

- 16 a) Define Lapse rate. Bring out its types, role of it in atmospheric stability and air (9)  
pollutant dispersion.
- b) Explain inversions and its effect in air pollutant dispersion (5)

**Module IV**

- 17 a) Discuss any four methods for sampling particulate matter in ambient air (8)
- b) How does emission inventory help in air quality management? (6)

**OR**

- 18 a) Enlist the objectives of air sampling and the difficulties involved in sampling? (7)
- b) Explain the application of an Electrostatic Precipitator in air sampling. (7)

**Module V**

- 19 a) Enlist any four types of scrubbers used in air pollutant control. Distinguish wet (6)  
scrubbers from dry scrubbers.
- b) Explain the working of fabric filter. Compare its merits and demerits. (8)

**OR**

- 20 a) List the various measures to control gaseous air pollutants. Discuss any two in (14)  
detail.

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