Reg No.:_____ Name:_____

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Sixth Semester B.Tech Degree (Hons.) Examination June 2020

**Course Code: CE374**

**Course Name: AIR QUALITY MANAGEMENT**

Max. Marks: 100 Duration: 3 Hours

**PART A**

***Answer any two full questions, each carries 15 marks.*** Marks

1 a) Distinguish between primary and secondary air pollutants with the help of examples. (4)

b) What is air pollution? List out the various manmade air pollutants. (3)

c) Explain any four industrial processes causing air pollution. (8)

2 a) Discuss the effects of following air pollutants on human beings. (9)

a) Particulate matter b) Hydrocarbons c) Carbon monoxide

b) Write short notes on a) Bhopal gas tragedy b) London smog (6)

3 a) Explain the effect of air pollutants on vegetation. (8)

b) What is indoor air pollution? How can you improve indoor air quality? (7)

**PART B**

***Answer any two full questions, each carries 15 marks.***

4 a) Discuss atmospheric inversion and its significance. (8)

b) Explain Gaussian plume model. What are the advantages & disadvantages of Gaussian plume model? (7)

5 a) Describe stable and unstable atmosphere. (5)

b) A factory is emitting Sulphur dioxide from a stack of effective height 250 m at a rate 500 g/s on a sunny day with moderate wind speed, 6 m/s at stack altitude. Estimate the total Sulphur dioxide concentration (10)

a) at a point 1 km downwind

b) at a point 1 km downwind and 50 m away from the centre line

c) at a point 1 km downwind, 50 m away from the centre line and 20 m above the ground.

Assume $\sigma y = 151$ m and $\sigma z = 108$ m

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| 6 | a) | Explain Pasquill stability curve for atmospheric dispersion of pollutants. | (7) |
| | b) | Explain the difference between Looping plume and Trapping plume with the help of neat sketches. | (8) |

## PART C

***Answer any two full questions, each carries 20 marks.***

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| 7 | a) | What is stack sampling? Explain its significance. | (5) |
| | b) | Explain the working of cyclone separator. Discuss the advantages and disadvantages. | (7) |
| | c) | Explain ambient air quality standards. | (8) |
| 8 | a) | Write notes on bag filter. | (6) |
| | b) | Explain the principles of air pollution control. | (4) |
| | c) | Discuss the methods used for controlling gaseous air pollutants. | (10) |
| 9 | a) | Explain in detail about the various methods used for the sampling of particulate air pollutants. | (10) |
| | b) | Explain the sampling and analysis methods for the following pollutants.<br>a) Carbon monoxide b) Oxides of Nitrogen | (10) |

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