Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

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)	Differentiate between acute and chronic injury.	(2)
	b)	Give a brief description about the sources of indoor air pollution.	(5)
	c)	What impact will rise greenhouse gases on climate?	(8)
2	a)	Explain the effect of any five air pollutants on the health of human beings.	(5)
	b)	What are the factors affecting air pollution?	(5)
	c)	List out the major primary and secondary pollutants.	(5)
3	a)	Discuss the effect of particulate matter on human health.	(8)
	b)	Briefly explain the major episodes of air pollution.	(7)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Explain the effects of atmospheric temperature and pressure on air pollution dispersion.	(7)
	b)	Write the assumptions of Gaussian plume model.	(5)
	c)	Classify atmosphere according to their stability condition.	(3)
5	a)	What is inversion? Explain the types of inversions.	(7)
	b)	Nitrogen dioxide is emitted at 110 g/s from stack with H = 80 m Wind speed = 5 m/s Plume rise is 20 m. Atmospheric conditions are assumed as neutral. Determine the ground level concentration s at a distance of 2 km downwind at a. The centre line of plume. b. At a crosswind distance of 0.6 km on either side of the centre line.	(8)
6	a)	Explain the effects of lapse rate on plume behaviour with neat sketches.	(12)
	b)	Define plume rise. How will you determine the effective height of stack?	(3)

PART C

Answer any two full questions, each carries 20 marks.

7 a) Discuss the National Ambient Air Quality Standards. (10)

b) Explain the principles of air pollution control. (10)

8 a) Explain the methods used for controlling gaseous contaminants. (15)

b) Write a note on high volume sampler. (5)

9 a) Determine the plate area required to collect a 0.6m particle with 92%efficiency for a gas flow of $10m^3$/sec through an electrostatic precipitator. The particle velocity was found to be 0.15m/sec. (10)

b) What is the significance of collecting particulate pollutants and analysing the collected samples? (10)

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