

**Subject Code: XXXXX**

**Roll No:**

--	--	--	--	--	--	--	--	--	--

**BTECH**  
**(SEM-5) AIR AND NOISE POLLUTION CONTROL 2021-22**

**TIME:3 HOUR**

**Total Marks: 100**

**Instruction:** Attempt the questions as per the given instructions. Assume missing data suitably.

**SECTION - A**

Attempt *All Parts* in Brief

**2\*10 = 20**

<b>Q1</b>	<b>Questions</b>	<b>Marks</b>
(a)	Define lithosphere.	2
(b)	What do you understand by hydrocarbon ?	2
(c)	Define air pollution dispersion.	2
(d)	What do you know about lapse rate ?	2
(e)	Enumerate ambient air quality standards adopted in India.	2
(f)	What are wet collectors ?	2
(g)	Write method for removal of NO <sub>x</sub> from fuel gases.	2
(h)	List any two advantages and disadvantages of scrubbers.	2
(i)	Define acoustic.	2
(j)	Write effect of noise pollution on the human health.	2

**SECTION - B**

Attempt Any Three of the following

3\*10 = 30

Q2	Questions	Marks
(a)	Define troposphere, stratosphere with respect to the ranges of altitude also mention the range of temperature and important gases found in each of these layers.	10
(b)	How is maximum mixing depth (MMD) determined? Explain the significance of maximum mixing depth in air pollution control.	10
(c)	Briefly describe the Guassian dispersion model for air pollutants ? Also write Holland's equation for the calculation of plane height.	10
(d)	Describe the principle of operation, advantages and limitations of the Gravitational settling chambers.	10
(e)	Explain point and line sources of noise pollution. Also write noise standards and sound pressure level.	10

### SECTION - C

Attempt Any One of the following

5\*10 = 50

Q3	Questions	Marks
(a)	Mention the names of some important sources generating hydrocarbons in air.	10
(b)	Discuss the adverse effects of carbon monoxide on human health. How can the reduction in carbon monoxide emission help mitigate these effects?	10
Q4	Questions	Marks
(a)	Discuss the criteria for fixing stack height.	10
(b)	What is a high volume sampler? Explain its salient features and procedure adopted for the sampling and measurement of suspended particulate matter.	10
Q5	Questions	Marks
(a)	How is a low voltage two stage electrostatic precipitator different from a high voltage single stage electrostatic precipitator ? Show the schematic view of a plate type electrostatic precipitator and mention the size efficiency relationship.	10
(b)	Derive the relation between temperature and altitude and explain its relation with atmospheric stability.	10
Q6	Questions	Marks
(a)	Discuss the pollution control process of gaseous contaminants through absorption.	10
(b)	With the help of suitable diagram explain the working principle of spray tower.	10

Q7	Questions	Marks
(a)	Explain the concept of equivalent continuous energy level ( $L_{eq}$ ).	10
(b)	Explain in detail the outdoor noise propagation and indoor noise propagation in relation with noise pollution and control.	10