

P P SAVANI UNIVERSITY

Fifth Semester of B. Tech. Examination

December 2022

SECH3530 Air pollution & Control

06.12.2022, Tuesday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION - I

Q - 1	Attempt any Five.	[05]	CO	BTL
(i)	What is AQI?		01	01
(ii)	Define Incineration.		01	01
(iii)	What is combustion?		01	01
(iv)	What is lapse rate?		01	01
(v)	PM ₁₀ is particulate matter having ____ micrometers or less in diameter		01	01
(vi)	Which of the following has less residence time in Atmosphere? a. Chloroflorocarbon b. Methane c. NO ₂ d. NO		01	01
(vii)	Which of the following is a secondary air pollutant? a. SPM (Suspended Particulate Matter) b. SO ₂ c. PAN (Peroxy Acetyl Nitrate) d. NO ₂		01	01
Q - 2 (a)	Discuss the types of pollutants with examples.	[05]	01	02
Q - 2 (b)	Give classification of pollution control equipments.	[05]	01	02
OR				
Q - 2 (a)	Explain the factors affecting Air pollution.	[05]	01	02
Q - 2 (b)	Explain Electrostatic precipitator with neat sketch.	[05]	01	02
Q - 3 (a)	What is Wind rose effect? Explain Mixing Depth effect.	[05]	02	02
Q - 3 (b)	List down different Absorption units. Explain any one in detail.	[05]	02	02
OR				
Q - 3 (a)	Discuss different types of Plume behavior.	[05]	02	02
Q - 3 (b)	Discuss in details: PM _{2.5} and PM ₁₀ .	[05]	02	02
Q - 4	Attempt any one.	[05]		
(i)	List down Control devices of Particulate contaminants. Discuss any one in detail.	[05]	02	02
(ii)	Explain Fabric filters.	[05]	02	02

SECTION - II

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]		
(i)	What is Acid Rain?	[01]	01	01
(ii)	Which of the following is not a source of ozone emission in the atmosphere? a. High voltage electrical equipments b. Xerox machines c. Dermatological photo-therapy equipments d. Refrigerators	[01]	01	01
(iii)	What is Indoor Air Quality?	[01]	01	01
(iv)	Define: Sick Building Syndrome.	[01]	01	01
(v)	Give examples of indoor air contaminants.	[01]	01	01
(vi)	What are greenhouse gases?	[01]	01	01
(vii)	What do you mean by emission standard used in automobiles?	[01]	01	01

- Q - 2 (a) Discuss the concept of Greenhouse gases and its effect. [05] 01 02
 Q - 2 (b) Give examples of indoor air contaminants. Explain major indoor air pollutants. [05] 01 05

OR

- Q - 2 (a) Discuss the Ozone layer depletion effect. [05] 01 02
 Q - 2 (b) Write short note on Acid rain with its causes and effects. [05] 01 05
 Q - 3 (a) How the Electrical vehicles can reduce the air pollution. [05] 02 04
 Q - 3 (b) Suggest the Eco-friendly techniques to reduce the air pollution. Any two innovative ideas. [05] 01 03

OR

- Q - 3 (a) How is the automobile industry impacting air pollution? [05] 02 04
 Q - 3 (b) Discuss the air emission standards. And suggest if the existing air pollution standards can curb the pollution problem. [05] 01 03
 Q - 4 Attempt any one. [05]
 (i) What are the functions of State pollution control board? [05] 02 02
 (ii) What are the functions of Central pollution control board? [05] 02 02

CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create