INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
Dundigal, Hyderabad - 500 043

CIVIL ENGINEERING

ASSIGNMENT QUESTIONS

Course Name	:	**AIR POLLUTION AND CONTROL**
Course Code	:	**A70136 - R15**
Class	:	**B. Tech IV - I Semester**
Branch	:	**Civil Engineering**
Year	:	**2018 – 2019**
Course Coordinator	:	**Mr. Srinivas Angadi, Department of Civil Engineering**
Course Faculty	:	**Mr. Srinivas Angadi, Department of Civil Engineering**

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

S. No	Question	Blooms Taxonomy Level	Course Outcome
	UNIT-I		
1	Discuss the different sources of air pollutants in detail, with suitable examples	Remember	2
2	Briefly explain the effects of air pollution on (i) Human health (ii) Plants (iii) Animals (iv) Materials	Understand	2
3	Explain briefly on air pollution episodes of London smog and Bhopal gas tragedy.	Remember	3
4	Explain primary and secondary air pollutants with examples. And its impact on environment	Understand	2
5	Explain briefly the harmful effects of sulphur dioxide on human being and plants.	Remember	4
6	List the factors that should be taken into consideration while selecting a site for an industry from the point of minimizing air pollution.	Remember	3
7	Describe the phenomenon of "green house effect", due to carbon dioxide.	Understand	2
8	List out the sources of Natural Sources Vs Manmade sources of Air Pollution. Classify the sources of Air Pollution?	Remember	2
9	Explain the process of Eutrophication with a neat sketch. Give its importance or impact in the environment.	Remember	2
10	Describe the phenomenon of "greenhouse effect", due to carbon dioxide.	Remember	3
	UNIT-II		
1	Explain with a neat sketches, how plume behave in different atmospheric stability condition.	Understand	3
2	Explain with neat sketches, how different atmospheric conditions give rise to different kinds of plumes.	Understand	4
3	Explain the terms (i) Environmental Lapse Rate (ii) Adiabatic Lapse rate (iii) Wind Rose (iv) Inversions	Understand	4
4	Define Wind rose. Explain the importance of wind rose in air pollution studies.	Understand	4
5	Discuss the factors to be considered for locating an industrial plant with reference to the air pollution.	Understand	3

S. No	Question	Blooms Taxonomy Level	Course Outcome
6	Explain the importance of proper planning and zoning of industrial and residential areas from the point of air pollution control.	Understand	3
7	List the meteorological parameters that influence the dispersion of pollutants in atmosphere.	Understand	4
8	Write a note on Atmospheric stability and temperature inversions.	Understand	4
9	What is a wind rose diagram? Explain with a neat sketch.	Remember	3
10	Explain different environmental lapse rates and their effects on dispersion of air pollutants.	Understand	4
	UNIT-III		
1	Explain 'Process change' Techniques without Emission Control Devices.	Understand	5
2	Explain 'Change in Fuel' Technique without Emission Control Devices.	Remember	5
3	Explain 'Improve Dispersion' Technique without Emission Control Devices.	Remember	6
4	Discuss on 'Good Operating Practices' and 'Plant Shutdown/Relocation' Technique without Emission Control Devices.	Understand	6
5	Describe Source Correction Methods (Control at Sources)	Remember	6
6	Discuss shortly on Pollution Control Equipment. How to classify generally the Pollution Control Equipment?	Understand	6
7	Discuss the approach to the control of air pollution by Dilution of the Contaminants.	Understand	6
8	Discuss the techniques on control of air pollution without using Emission Control Devices.	Remember	6
9	Explain air pollution control equipment-Electrostatic precipitator with sketch.	Remember	6
10	Explain with sketch air pollution control equipment- Spray tower.	Remember	6
	UNIT-IV		
1	Describe the process of Adsorption. Explain with an example	Remember	7
2	Describe the process of Absorption. Explain with an example	Remember	7
3	Differentiate between physical and chemical adsorption.	Remember	7
4	Discuss three types of equilibrium graphs to describe adsorption capacity.	Remember	7
5	Discuss the factors affecting the performance of adsorption system.	Understand	7
6	List five different types of adsorbents and their major uses.	Remember	7
7	Describe the process of Absorption in control of air pollutants.	Understand	7
8	Describe the process of Combustion in control of air pollutants.	Remember	7
9	Discuss the general methods of control of NO_x emission.	Remember	7
10	Discuss the general methods of control of NO_2 emission.	Understand	7
	UNIT-V		
1	Discuss the recommended Criteria for siting the monitoring stations	Understand	9
2	Mention the components of ambient air sampling systems	Understand	9
3	Write briefly the characteristics for ambient air sampling systems.	Remember	9
4	What are the basic considerations for air sampling	Remember	9
5	Briefly discuss the Global warming. And list its effects on the environment	Remember	9
6	Discuss on the requirements of air monitoring stations for analysis of air pollutants.	Remember	9
7	What is the difference between primary and secondary air pollutants?	Remember	8
8	What is acid deposition? Why is that term better than acid rain?	Understand	8
9	What are the major sources of outdoor pollution?	Understand	8
10	What is a thermal inversion? How do thermal inversions relate to air pollution "events"?	Understand	8

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