Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2024

Subject Code:3153512 Date:31-05-2024

Subject Name:Air Pollution Control - I

Time:02:30 PM TO 05:00 PM Total Marks:70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Define temperature lapse rate and stability.	**03**
	(b)	What are the modifications of Gravity settling chamber? Explain in brief.	**04**
	(c)	If following atmospheric condition exists in atmosphere, **Altitude (m):** 0, 100, 200, 300, 400, 500, 600, 700 **Temperature (°C):** 31, 28, 25, 22, 24, 26, 28, 30 If the maximum daytime surface temperature is 35°C and at a height of 10m, the average wind speed was observed as 4.5 m/s. What would be the ventilation coefficient? (Assume the value of n=0.20 for prevailing stability class and surface roughness and average wind speed is same as wind speed at the halfway of MMD.)	**07**
Q.2	**(a)**	What are the salient features of ODS Rules?	**03**
	(b)	What is AQI? Describe all AQI categories with remarks and colour codes.	**04**
	(c)	Discuss in detail about the sampling procedure for ozone.	**07**
		OR	
	(c)	Discuss in detail about the sampling procedure for CO.	**07**
Q.3	**(a)**	What is CEPI? Explain in brief.	**03**
	(b)	How AQI is calculated?	**04**
	(c)	What is the absorbing reagent used for sampling of SO_2? Explain the steps for sampling of SO_2.	**07**
		OR	
Q.3	**(a)**	Discuss Maximum Mixing Depth.	**03**
	(b)	What are the salient features of Air Pollution Act & Rules?	**04**
	(c)	What are the absorbing reagents used for sampling of NOx? Explain the steps for sampling of NOx.	**07**
Q.4	**(a)**	Discuss in brief about heat island effect.	**03**
	(b)	Explain in detail about controls of noise pollution.	**04**
	(c)	What are the methods to control odour? Explain in detail.	**07**
		OR	
Q.4	**(a)**	Define lapse rate. Draw a neat sketch of trapping and coning.	**03**
	(b)	Discuss the advantages and disadvantages of fabric filter.	**04**

	(c)	Explain the sampling procedure for B(a)P.	**07**
Q.5	**(a)**	Describe the working of ESP.	**03**
	(b)	What are the operational problems of Cyclone separator?	**04**
	(c)	Explain effective stack height in detail.	**07**

OR

Q.5	**(a)**	Explain the effects of CO on human health.	**03**
	(b)	Explain the construction of packed bed column with a neat diagram.	**04**
	(c)	What are the physical and physiological effects of noise pollution? Explain in detail.	**07**

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