

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018****Subject Code:2161711****Date:04/12/2018****Subject Name:Environmental Instrumentation****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.

		MARKS
<b>Q.1</b>	(a) Explain photo ionization in detail.	<b>03</b>
	(b) Explain TCD detectors in detail.	<b>04</b>
	(c) Explain CO measurement.	<b>07</b>
<b>Q.2</b>	(a) Explain hydrocarbon detector in detail	<b>03</b>
	(b) Explain ambient air quality measurement in detail.	<b>04</b>
	(c) Explain design criteria for settling tank	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(c) Explain SOX and NOX.	<b>07</b>
	(a) Explain Turbidity measurement in detail.	<b>03</b>
	(b) Explain Beer-Lamberts law.	<b>04</b>
	(c) Explain HPLC in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Explain Opacity measurement in detail.	<b>03</b>
	(b) Explain Stokes law..	<b>04</b>
	(c) What is chromatography? Explain Gas Chromatography in detail.	<b>07</b>
<b>Q.4</b>	(a) Explain Air flow measurement in detail.	<b>03</b>
	(b) Difference between Portable and Stationary Instruments.	<b>04</b>
	(c) Explain UV-Visible analyzer in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain Vane anemometer in detail.	<b>03</b>
	(b) Explain use of basin. What criteria shall keep in mind to basin design?	<b>04</b>
	(c) Explain soap bubbler method.	<b>07</b>
<b>Q.5</b>	(a) why instrumentation engineer needs to assure quality of water.	<b>03</b>
	(b) Explain ECD in detail.	<b>04</b>
	(c) How to calculate PH? Explain any PH measurement electrode	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Why underground water level monitoring is required for industry.	<b>03</b>
	(b) Explain air pollution measurement methods.	<b>04</b>
	(c) Explain water treatment requirements in detail.	<b>07</b>

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