

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3170212

Date:16-12-2024

Subject Name: Automotive Pollution and Control

Time:10:30 AM TO 01:00 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
<b>Q.1</b> (a) What is Pollution? And list various types of Pollution.	03
(b) Enlist various effects of pollution on environment and human.	04
(c) Explain Emission Standards for India and compare it with recent Euro norms.	07
<b>Q.2</b> (a) Explain various Emission formation in SI Engines.	03
(b) Explain Evaporative Emission Control system with neat sketch.	04
(c) Explain different types of catalytic converter.	07
<b>OR</b>	
(c) Explain Exhaust Gas Recirculation and secondary air injection system.	07
<b>Q.3</b> (a) Explain Formation of White, Blue, and Black Smokes, Soot, Particulate Matter from CI engine.	03
(b) Explain Diesel Oxidation Catalysts and Diesel de-NOx Catalysts	04
(c) Enlist different types of SI engine emission Control devices.	07
<b>OR</b>	
<b>Q.3</b> (a) Enlist different Fuel Injection System for CI engine.	03
(b) Explain EGR Control and EGR Cooling and Heating devices.	04
(c) Explain lean NOx traps (LNT) and Diesel Particulate Filters for BS VI Engine.	07
<b>Q.4</b> (a) Explain Noise reduction technique in Automobiles.	03
(b) Explain Cold start emission control for SI Engine.	04
(c) Discuss why it is require to use of unleaded petrol.	07
<b>OR</b>	
<b>Q.4</b> (a) Explain briefly of Engine Noise, Transmission Noise, vehicle structural Noise, aerodynamics Noise, Exhaust Noise.	03
(b) Explain working and construction of HCCI Engines.	04
(c) What are the Encapsulation technique for noise reduction and Silencer Design?	07
<b>Q.5</b> (a) What do you means by ECE and EUDC driving cycle?	03
(b) Explain Indian driving cycles for test.	04
(c) Explain Constant Volume Sampling (CVS) Procedure for driving cycles.	07
<b>OR</b>	
<b>Q.5</b> (a) What are the uses of Smoke meters ?	03
(b) Elaborate of Gas Chromatography for emission testing.	04
(c) What are the different method of Particulate Emission Measurement?	07

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