



CBCS SCHEME

15AU654

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021 Automotive Pollution and Control

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Describe the European statutory values of particulate emission for light passenger car, light utility vehicles and trucks. (08 Marks)
b. Explain the influence of actual traffic conditions and vehicle maintenance on emissions. (08 Marks)

OR

- 2 a. What are the ill effects of air pollution on human health? (08 Marks)
b. How would air pollution effect animals and plants? (08 Marks)

Module-2

- 3 a. Explain the formation of nitrogen oxide that takes place during combustion. (08 Marks)
b. Elaborate on formation of carbon monoxide in CI Engines. (08 Marks)

OR

- 4 a. Compare the emission of hydrocarbons from SI engine and CI engine. (08 Marks)
b. How is Soot formed? Explain soot oxidation. (08 Marks)

Module-3

- 5 a. With an appropriate sketch, explain exhaust gas recirculation. (08 Marks)
b. What do you understand by crankcase ventilation? Explain its working principle. (08 Marks)

OR

- 6 a. What are the characteristics of petrol and diesel? How do they effect the emissions? (08 Marks)
b. Mention the measures in engine to control diesel emissions. How does fuel additives help in reduction of smoke? (08 Marks)

Module-4

- 7 a. Elaborate any two methods of NO_x treatment. (08 Marks)
b. What is Catalytic mechanism? Explain the catalytic converter in emission reduction. (08 Marks)

OR

- 8 a. Explain particulate traps and diesel trap oxidizer. (08 Marks)
b. What is Catalyst poisoning? What are benefits of installation of catalyst in exhaust lines? (08 Marks)

Module-5

- 9 a. Elaborate the following process : i) Electrostatic precipitation ii) Thermal precipitation. (08 Marks)
b. Differentiate between Volumetric and Gravimetric methods. (08 Marks)

OR

- 10 a. Elaborate the construction and working of NDIR analyzer, with a neat sketch. (08 Marks)
b. Explain the working of Bosch Smoke meter. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.