

CBCS SCHEME

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15AU654

Sixth Semester B.E. Degree Examination, June/July 2018 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. Explain the influence of actual traffic conditions and maintenance on the exhaust. (08 Marks)
b. Explain the regulatory test procedure of European Cycle emission. (08 Marks)

OR

- 2 a. Discuss in detail the historical background of associated laws and regulations. (08 Marks)
b. Discuss the effect of air pollution on human health. (08 Marks)

Module-2

- 3 a. Describe the mechanism of formation of oxides of nitrogen in CI engines. (08 Marks)
b. Explain in detail the reasons for the liberation of CO after the combustion. (08 Marks)

OR

- 4 a. Explain the formation of UBHC in CI and SI engines. (08 Marks)
b. With graph, explain the effect of air – fuel ratio on NO_x and CO emission. (04 Marks)
c. Describe the variables affecting soot formation. (04 Marks)

Module-3

- 5 a. With a neat sketch, explain EGR system and how it controls the NO_x emissions. (08 Marks)
b. Explain the effects of fuel properties on pollution, (08 Marks)

OR

- 6 a. Define Octane number and Cetane number. Explain their effect on emission of SI and CI engines respectively. (08 Marks)
b. Explain with a neat sketch, the significance and working of positive crankcase ventilation. (08 Marks)

Module-4

- 7 a. Explain with a neat sketch, working principle of three way catalytic converter in SI engine. (08 Marks)
b. Discuss the thermal reactors used for exhaust gas treatment. (08 Marks)

OR

- 8 a. With a neat sketch, explain the working of ceramic honeycomb type catalyst converter. (08 Marks)
b. With a neat sketch, explain the working of wire mesh particulate trap and oxidizer. (08 Marks)

Module-5

- 9 a. Explain particulate sampling method through sedimentation. (08 Marks)
b. Briefly discuss the following sampling methods : (08 Marks)
i) Electrostatic precipitation ii) Thermal precipitation iii) Centrifugal methods.

OR

- 10 a. With a neat sketch, explain the working of Bosch meter. (08 Marks)
b. With a neat sketch, explain the construction and working of NDIR Analyser. (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.