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Sixth Semester B.E. Degree Examination, July/August 2022 Automotive Pollution and Control

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Describe the Influence of actual traffic conditions and maintenance on the exhaust. (10 Marks)
 b. Discuss in detail the Historical background of associated laws and regulations. (10 Marks)

OR

- 2 a. Discuss in detail, the effect of Air pollution on Human Health. (10 Marks)
 b. Explain the ill effects of Air pollution on Animals and Plants. (10 Marks)

Module-2

- 3 a. Explain in detail the reasons for the liberation of CO after combustion. (10 Marks)
 b. Describe the mechanism of formation of oxides of Nitrogen in C.I. Engines. (10 Marks)

OR

- 4 a. Describe the variables affecting soot formation. Explain soot oxidation. (10 Marks)
 b. Compare the emission of Hydrocarbons from SI engine and C.I engines. (10 Marks)

Module-3

- 5 a. Explain with a neat sketch, the significance and working of positive Crankcase Ventilation system. (10 Marks)
 b. With an appropriate sketch, explain exhaust gas recirculation. (10 Marks)

OR

- 6 a. Explain the effects of fuel properties on pollution. (10 Marks)
 b. What are the characteristics of petrol and diesel? How do they effect the emissions? (10 Marks)

Module-4

- 7 a. Explain with a neat sketch, the working principle of three way Catalytic converter in S.I engine. (10 Marks)
 b. Elaborate any two methods of NOx treatment. (10 Marks)

OR

- 8 a. What is Catalyst Poisoning? What are the benefits of installation of catalyst in exhaust lines? (10 Marks)
 b. With a neat sketch, explain the working of wire mesh particulate trap and oxidizer. (10 Marks)

Module-5

- 9 a. Briefly discuss the following sampling methods :
 i) Electrostatic precipitation
 ii) Thermal precipitation
 iii) Centrifugal methods. (12 Marks)
 b. Explain particulate sampling method through sedimentation. (08 Marks)

OR

- 10 a. With a neat sketch, explain the construction and working of NDIR Analyser. (08 Marks)
 b. With a neat sketch, explain the working of Bosch smoke meter, Hartridge smoke meter. (12 Marks)