

FACULTY OF ENGINEERING

B.E. 4/4 (AE) I-Semester (Main) Examination, November / December 2012

Subject: Automotive Pollution & Control

Time: 3 Hours

Max. Marks: 75

Note: Answer all questions from Part-A and Answer any five from Part-B

Part-A (25 marks)

1. What is Global Warning? (2)
2. How the spark timing can influence the HC emissions? (3)
3. How the cetane no. of diesel fuel can influence the smoke emissions? (3)
4. What is meant by emission and pollution from an automobile engine? (2)
5. How the Unburnt Hydrocarbons are formed in SI engine? (2)
6. What is meant by Photochemical Smog? (2)
7. Draw the effect of Rate of injection on smoke formation in diesel engines. (3)
8. What is a Catalytic converter? (3)
9. What are the sources of evaporative emission? (3)
10. How the spark timing can change the No Concentration in SI engine? (2)

Part-B (5 x 10 = 50 marks)

11. What is meant by EGR? What for it is used? Explain the method with a neat schematic Diagram. Also draw its emission reduction characteristics.
12. Explain about the mechanism of HC and Co formation in four stroke SI engines.
13. Explain about how pollutants emitted by automobile engines effect the human health and environment.
14. Explain in detail about the factors affecting smoke formation in Diesel engines
15. How do the Design and operating conditions of spark ignition engine can control the emissions? Explain in Detail.
16. Explain about NDIR, FID and Chemiluminescent analyzers.
17. With an appropriate illustration, explain the effect of engine speed, combustion time and cetane no. on Nitric oxide formation in Diesel engine.