

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]  
(2125)

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**B. Tech 6th Semester Examination**  
**Automobile Pollution & Control Systems (OS)**  
**AU-6001**

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt five questions in all selecting one question from each section A, B, C, D and Section E is compulsory.

**SECTION - A**

1. What is the effect of the following factors on the exhaust emissions?
  - (a) Air-Fuel Ratio
  - (b) Surface-Volume Ratio
  - (c) Road Speed. (3×5=15)
2. Explain the formation of carbon monoxide (CO) and Hydrocarbons (HC) in 2-stroke SI engines. (15)

**SECTION - B**

3. What is the cause of Diesel smoke? Discuss the different methods of controlling the diesel smoke. (15)
4. Explain the nature and mechanism of combustion in SI and CI engines. (15)

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**SECTION - C**

5. Explain clearly the function of the exhaust-Gas Recirculation (EGR) system. (15)
6. Describe the positive crank case verification (PCV) system used in automotive engines and explain how the PCV valve operates under various conditions. (15)

**SECTION - D**

7. Explain Indian emission standards & procedures in details. (15)
8. Write a detailed note on ambient air quality standards. (15)

**SECTION - E**

9. (i) Explain working of smoke meter.  
(ii) Describe the mechanism of smoke formation.  
(iii) How the human being affected by the pollutants from automotive engine exhaust?  
(iv) Explain working principle of catalytic convertor.  
(v) Explain the Fumigation.  
(vi) What is influence of Vehicle maintenance in emissions?  
(vii) Explain function → NDIR analyser.  
(viii) What is meant by term spot sampling?  
(ix) Write a short note on pollutants.  
(x) What is exhaust gas composition before treatment?  
(4×10=40)