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**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**  
*A Constituent Institution of Manipal University*

**VII SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)**

**END SEMESTER EXAMINATIONS, NOV/DEC 2016**

**SUBJECT: AUTOMOBILE POLLUTION & CONTROL(AAE-471)**

**REVISED CREDIT SYSTEM**  
**(30/11/2016)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ANY FIVE FULL** questions.
- ❖ Missing data may be suitable assumed.

- 1A. Define Pollution and write basic classification of pollutants. (05)
- 1B. Write the phenomenon of formation of NO<sub>x</sub> its causes as well as effect on human health. (05)
- 2A. With neat sketch explain the construction and working of common rail fuel injection system. (05)
- 2B. How Hart ridge smoke meter works? (03)
- 2C. Write four reason for Knocking in IC engines. (02)
- 3A. Discuss methods used to control noise pollution in automobiles with suitable example. (03)
- 3B. What are the sources of vehicle emission? Discuss briefly. (02)
- 3C. Explain how evaporative emission control system control's emission. (05)
- 4A. What are the oxygenated fuels ?compare their performance with gasoline on the basis of the following parameters(i)Engine emission (ii) Volumetric efficiency (iii)compression ratio (03)
- 4B. Write difference between gulp valve and diverter valve (02)
- 4C. Why LPG is used as an alternative fuel? (05)
- 5A. Write classification of catalytic converter & with neat sketch explain how three way catalytic converter work (05)
- 5B. What is smog? What conditions lead to smog formation? (03)
- 5C. What is Acid rain? (02)
- 6A. Explain how stratification is achieved in engine and write advantages of it. (05)
- 6B. Write different methods of production and storage of hydrogen. (05)

