

**AUTOMOBILE ENGINEERING**

( Mechanical Engineering )

Time: 3 Hours

Max. Marks: 70

*Answer any FIVE Questions*  
*All Questions carry equal marks*

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1. Explain with neat sketches different types of automobile engines used in automobiles.
2. (a) Discuss the common rail fuel injection system. What are its merits and demerits?  
(b) Illustrate the construction and working principle of a fuel injector.
3. (a) Describe briefly the various components of water cooling system.  
(b) Describe with diagram, the battery coil ignition system.
4. (a) What is diesel odour? Explain the effects of different factors on the formation of odour in CI engines.  
(b) What are the methods of controlling the oxides of nitrogen presenting in an IC engine exhaust? Describe any one of them.
5. (a) Describe the common faults occurring in the generators.  
(b) Explain fully how these faults may be detected and remedied.
6. With the help of a neat sketch, explain the construction and operation of a constant mesh gear box.
7. Describe with the help of neat sketch, the working of the power steering unit.
8. What is the purpose of independent suspension system? How is it achieved in front and rear axles?