

Code No: 56022

**R09**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD**

**B. Tech III Year II Semester Examinations, November/December - 2015**

**AUTOMOBILE ENGINEERING**

**(Common to ME, MCT, MSNT)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions**

**All questions carry equal marks**

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- 1.a) What are the different components required in power unit of an automobile? Explain each component along with their functionality.
- b) What do you understand by four wheel drive? Compare its performance with front wheel drive and rear wheel drive. [7+8]
- 2.a) Explain the major important requirements for the injection of fuel into diesel engine along with suitable diagram.
- b) What is the role of carburetor in petrol engine? Discuss its constructional and operational features. [7+8]
- 3.a) Explain the significance of pressure sealed cooling system of the engines in an automobile. Discuss the salient features of the system with a suitable sketch.
- b) Differentiate between contact breaker and contact triggers used in electronic ignition system of the engine. [7+8]
- 4.a) What are the alternate energy resources used for automobiles? Explain the use of solar energy for the working of an automobile.
- b) Discuss the National standards maintained for the pollution control and compare with the International standards. [8+7]
- 5.a) Why the temperature in the engine should be monitored? Explain the causes for high temperatures in the engine.
- b) What is the mechanism used to regulate the voltage and current in the automobile charging circuit? Explain. [8+7]
- 6.a) Differentiate between the principle of operation of magnetic clutch and centrifugal clutch.
- b) Explain the operation of Hotch - Kiss drive along with the suitable diagram. [8+7]
- 7.a) What are the advantages and limitations of independent suspension system? Explain its constructional features.
- b) How do vacuum brakes function in automobile? Explain with a suitable diagram along with their limitations. [7+8]
- 8.a) Why steering mechanism is required in automobiles? Explain different types of steering mechanisms.
- b) What are the different components of a steering mechanism? Explain the materials used for manufacturing of these components. [7+8]

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