

**R13**

Code No: 126EH

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**B. Tech III Year II Semester Examinations, October/November - 2016**  
**AUTOMOBILE ENGINEERING**  
(Common to ME, MCT)

Time: 3 hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.  
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****(25 Marks)**

- 1.a) How are automobiles classified? [2]
- b) Describe the different shapes of an automobile. [3]
- c) What is the function of contact points inside the distributor? [2]
- d) What are the basic requirements of an ignition system for an I.C. engine? [3]
- e) What is the function of a stabilizer? [2]
- f) Define bouncing, pitching and rolling? [3]
- g) What is the function of a proportioning control valve? [2]
- h) What are the basic characteristics of a brake fluid? [3]
- i) What is the basic function of a canister in evaporative emission control systems? [2]
- j) Write three reasons for using monolith three-way catalytic converter. [3]

**PART - B****(50 Marks)**

- 2.a) Describe the construction and working of a fuel feed pump used in a diesel engine.
- b) Explain the difference in ignition method of fuel in case of petrol and diesel engines. [6+4]

**OR**

- 3.a) Describe the construction and working principle of a carter carburetor.
- b) What are the air- fuel requirements of a carburetor at different operating conditions? [6+4]

- 4.a) Describe the construction and working of a rotating armature type magneto system.
- b) Compare battery coil and magneto ignition system. [6+4]

**OR**

- 5.a) Why electronic ignition system is preferred over conventional ignition system?
- b) Why is water cooling preferred than air cooling systems? Explain. [6+4]

- 6.a) Explain rigid axle and independent suspension system. Discuss their applications.
- b) Write about shackles. [6+4]

**OR**

- 7.a) Explain the two types of clutch operating mechanisms.
- b) What types of gears are used in sliding mesh transmission and constant mesh transmission? Justify. [6+4]

- 8.a) Explain the working of a tandem master cylinder. Give its merits and demerits.  
b) Write about the power brakes. [6+4]

**OR**

- 9.a) Explain the working of a electronic power steering.  
b) Classify the different types of steering mechanisms for cars. [6+4]

- 10.a) Explain the emission standards for pollution control. Describe Euro-IV norms for passenger cars.  
b) What is stratified charge? Explain its working principle. [6+4]

**OR**

- 11.a) Explain Indian standards for emissions for petrol and diesel vehicles.  
b) Describe the correlation between the three toxic components based on air-fuel ratio. [6+4]

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