

**R13**

Code No: 126EH

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, May - 2017****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) Define Chassis. [2]
- b) What is MPFI system? [3]
- c) Define thermostat. [2]
- d) What are the requirements of a good spark plug? [3]
- e) Define contact brakes. [2]
- f) What is the function of a propeller shaft? [3]
- g) What is King pin inclination? [2]
- h) What is meant by Toe-in and Toe-out? [3]
- i) Name the different alternative fuels. [2]
- j) Define octane and Cetane numbers. [3]

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

- 2.a) Classify the different types of carburetors.
  - b) Show and explain with reason the mixture requirement for idling, cruising and high power range at various throttle openings. [5+5]
- OR**
- 3.a) What is the function of Fuel-injection holder?
  - b) Explain the different types of nozzles with neat sketches. [5+5]
- 4.a) What are the advantages of liquid-cooling systems.
  - b) Explain the working of thermo-syphon cooling system. [5+5]
- OR**
- 5.a) What are the factors that affect spark-advance.
  - b) Briefly explain the working of the battery-ignition system with the help of a circuit diagram. [5+5]
- 6.a) What is the principle of differential?
  - b) Differentiate between Torque tube and Hotch-kiss drive. [5+5]
- OR**
- 7.a) What are the function of a shock absorber?
  - b) Explain the construction and working of telescopic type of shock absorber with the help of a neat diagram. [5+5]

- 8.a) Write a short note on Tandem master cylinder. [5+5]  
b) Explain hydraulic brake system with neat sketch.

**OR**

- 9.a) Write a short note on Ackerman steering gear mechanism. [5+5]  
b) Explain the construction and working of Davis steering gear mechanism.

- 10.a) What are the advantages of C.N.G and L.P.G? [5+5]  
b) Explain the working of a catalytic converter.

**OR**

- 11.a) How hydrogen fuel is used as an alternate fuel? [5+5]  
b) What are the advantages and disadvantages of Bio-diesel?

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