

**R13**

Code No: 126EH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, April - 2018

**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) Indicate the different types of vehicle body. [2]
- b) What aspects are to be considered in vehicle layout and drivers cabin? [3]
- c) How an electric horn works? [2]
- d) Explain briefly the construction and operation of the wind screen wiper. [3]
- e) What is a damper? [2]
- f) What is the function of torsion bar? [3]
- g) Upon what force does the operation of every type of brake depend? Explain? [2]
- h) What are steering ratio and steering stops? [3]
- i) What is road noise? How to reduce it? [2]
- j) What are the effects of carbon monoxide emissions from an automobile? [3]

**PART - B**

(50 Marks)

- 2.a) Explain briefly the constructional features of the various parts of a car body
- b) Sketch the mechanical pump and describe its working. [5+5]

**OR**

- 3.a) How carburetors are classified? Explain the construction and operation of a simple Carburetor.
- b) Explain the working principle of a CRDI with neat sketch. [5+5]

- 4.a) Describe magneto ignition system with a neat sketch.
- b) What is the function of the spark plug? Explain its constructional features. [5+5]

**OR**

- 5.a) What is meant by firing order? Give the firing order of 4 and 6 cylinder engines.
- b) What is the purpose of a radiator in an automobile? Explain its construction. [5+5]

- 6.a) Explain the construction of stub axle and wheel mounting.
- b) What is hotch kiss and torque tube drive? [5+5]

**OR**

- 7.a) What is tractive effort? Why four wheel drive is used in some vehicles?
- b) Explain Dedion shaft drive mechanism with a neat sketch. [5+5]

7R 7R 7R 7R 7R 7R 7R 7

- 8.a) Sketch and explain Davis steering Mechanism.  
b) Describe power steering mechanism with a neat sketch. [5+5]

OR

- 9.a) Discuss the construction of tandem master cylinder.  
b) What is meant by self locking tendency of brakes? What factors helps this to occur? [5+5]

- 10.a) What causes emissions of hydrocarbons from an automobile? What are its effects?  
b) What causes emissions of nitrogen oxides from an automobile? What are its effects? [5+5]

OR

- 11.a) Discuss the role of hydrogen as an alternative fuel in an IC engine.  
b) What are the merits and demerits of LPG as a fuel in IC engine? [5+5]

7R 7R 7R ---ooOoo--- 7R 7R 7R 7

7R 7R 7R 7R 7R 7R 7R 7

7R 7R 7R 7R 7R 7R 7R 7

7R 7R 7R 7R 7R 7R 7R 7

7R 7R 7R 7R 7R 7R 7R 7