

13-MECH-III/II-5su

R13

Code No: 126EH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year-II Semester Examinations, May - 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) What is the use of carburetor in S.I. engine? [2]
- b) Explain about the requirements of diesel injection system. [3]
- c) What is the spark advance and retard mechanism? [2]
- d) Explain about the starting system of automobile. [3]
- e) What are the functions of clutch? [2]
- f) Why the shock absorbers are used in automobile. [3]
- g) What do you mean by master cylinder? [2]
- h) Explain about the king pin rake. [3]
- i) What are the advantages of using hydrogen as fuel? [2]
- j) What are the merits and demerits of biomass? [3]

PART - B

(50 Marks)

- 2.a) Discuss about the fuel supply system in S.I. engine. [5+5]
- b) Explain about the different types of air filters. [5+5]
- OR**
- 3.a) Explain about the formation of spray in C.I. engine. [5+5]
- b) Discuss about the chassis and body components in automobile. [5+5]
- 4.a) What do you mean by the term "Ignition"? How is it related with "combustion"? [5+5]
- b) Sketch and explain different types of Ignition systems used in automotive engines. [5+5]
- OR**
- 5.a) Explain in detail about the liquid cooling system with a diagram. [5+5]
- b) Discuss about the bendix drive mechanism. [5+5]
- 6.a) Discuss the working principles of
 - i) Torque tube drive.
 - ii) Hotchkiss drive.
- b) What are the functions of universal joint and Propeller shaft? [5+5]
- OR**
- 7.a) Describe in detail about single plate clutch with a neat diagram. [5+5]
- b) Explain about the differential rear axle with neat sketch. [5+5]

- 8.a) Explain the working principles of Hydraulic braking system with neat sketches.
b) Sketch and explain various steering geometries. [5+5]

OR

- 9.a) Discuss about the Davis steering mechanism in the automobiles.
b) Describe about the mechanical brake system. [5+5]

10. Describe in detail about the multipoint fuel injection for S.I. engines. [10]

OR

- 11.a) What are the pollution standards for automobile.
b) Discuss different energy alternatives with their merits and demerits. [5+5]

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