

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (2011 Onwards) (Sem.-5)

AUTOMOBILE ENGINEERING

Subject Code : BTME-505

Paper ID : [A2132]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) Differentiate between frameless and unitary construction in automobile.
- b) Define Tractive effort. Draw Tractive effort curves under different gears.
- c) What is “Unsprung Weigh”, why it is kept low?
- d) What are Multi-grade oils?
- e) Why is function of butterfly valve in Governor?
- f) Enlist various sources of Vehicle Emission.
- g) Define Toe-in and Toe-out.
- h) What is torque wrench and where it is used?
- i) State applications for Front and Rear wheel drives.
- j) What are the advantages of independent suspension system?

SECTION-B

2. Write short notes on pollution due to vehicle emission and exhaust emission control system.
3. Discuss working of modern engine cooling system with neat sketch.
4. Explain the following terms :

Camber, castor, King pin inclination and included angle; also discuss their impact of steering characteristics of vehicle.
5. Discuss working of Servo brakes with neat sketch.
6. Explain with necessary sketches the working of modern electronic ignition system.

SECTION-C

7. Explain with line diagram the working of :
 - (i) Individual pump and nozzle system
 - (ii) Unit injector system
 - (iii) Common rail system
 - (iv) Distributor system
8. Explain the construction, principle of working of Automatic transmission and list merits of synchromesh gear box over constant mesh and sliding mesh gear box.
9. Write the Preventive maintenance, troubleshooting and rectification of lubrication and braking system.