

Code: 9A03606

R09

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

AUTOMOBILE ENGINEERING

(Mechatronics)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What is crank case ventilation and how is it achieved in IC engines?
(b) Describe in detail the operation of various rear axle drives with neat sketches.
- 2 (a) What are the defects in a simple carburetor and explain how these defects of this are rectified?
(b) Explain with a neat sketch the working of any one type of fuel injection pump.
- 3 (a) What is pressure cooling explain with a neat sketch of pressure sealed cap and bring out its advantages?
(b) Explain the requirement of a contact breaker and discuss in detail its various types.
- 4 (a) What are the advantages of using CNG fuel over diesel with respect to exhaust emission control? Explain.
(b) What is the role of a catalytic converter and how does it function?
- 5 (a) Why is it necessary to aim the head lights correctly? Explain the complete procedure for the same.
(b) Explain Bendix drive mechanism in starting of an engine.
- 6 (a) Where and why do we use multiple clutch? Explain the constructional features and working of a multiple dry clutch.
(b) What is the purpose of differential in an automobile and explain the necessity of locking system for it?
- 7 (a) Discuss a steering linkage for a vehicle with independent suspension.
(b) Explain the terms:
(i) Camber. (ii) Toe-in. (iii) King Pin inclination.
- 8 (a) Distinguish between a spring and shock absorber. Explain the working of a telescopic type of shock absorber.
(b) What do you understand by servo mechanism and explain the working of a vacuum servo brake system.
