



Reg. No.

Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

V SEMESTER B.TECH (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: TWO AND THREE WHEELED VEHICLES [AAE 4022]

REVISED CREDIT SYSTEM

Time: 3 Hours

(03/01/2017)

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A. How two and three wheeled vehicles are classified as per SAE regulations based on engine capacity? (02)
- 1B. Explain the rotary valve charge induction system for two-stroke engines and mention its advantages. (03)
- 1C. What are wire wheels? Show pictorially the fitment of the spokes at the hub and rim ends (03)
- 1D. Show pictorially the details of a drum type centrifugal clutch. (02)
- 2A. Explain the constructional details and working of a gas- fluid damper unit. (03)
- 2B. With a neat sketch, illustrate the features of a OHC valve actuation mechanism. (03)
- 2C. What is mist lubrication system? Where does it find applications? (02)
- 2D. Draw a neat sketch of a spark plug and label its features (02)
- 3A. Explain the construction and working of a constant mesh gear box for scooters. (04)
- 3B. With a neat diagram, explain the constructional details of a monocoque chassis. Which type of two wheelers adapt such frames? (03)
- 3C. Explain the constructional details and working of a leading link type front suspension system. Cite any two present day vehicles using this type of suspension. (03)
- 4A. Sketch a layout of complete transmission system used in scooters. (03)
- 4B. With a neat diagram demonstrate the working of a leading – trailing shoe mechanical brake system (03)
- 4C. What are double cradle frames? Where are they used? (02)
- 4D. Write short notes on (i) Throttle valve (ii) air filters (02)
- 5A. Explain the constructional details of a radial ply tire. What are its advantages? (03)
- 5B. Draw a circuit used for the horns in vehicles. (02)

- 5C.** What is expansion chamber? How it eases the exhaust flow? **(03)**
- 5D.** How the three wheeled vehicles are classified? **(02)**