

AUTOMOBILE ENGINEERING

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Explain the role of Synchronizer in the automotive transmission system.
 - (b) List the advantages of hydrogen fuel used in automobiles.
 - (c) Explain the function of regulator in a charging system.
 - (d) What is unity injection system?
 - (e) What is Hotchkiss drive and Torque Tube drive?
 - (f) What is an over drive?
 - (g) Define wheel track and wheel base.
 - (h) Examine the use of torque convertor in an Automobile.
 - (i) List the differences between disc brake and drum brake.
 - (j) Why I section at middle and oval section at end is preferred for front axle?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) Distinguish between Supercharging and Turbocharging.
(b) Draw front wheel drive layout for a four wheeler and explain its advantages and disadvantages.

OR

- 3 (a) What do you understand by crank case ventilation and what are its effects?
(b) What are the basic types of rotary-operating oil pumps used in pressure feed lubrication system and explain any one of them with a neat sketch.

UNIT – II

- 4 What are the major pollutants produced by I.C engines and explain their effect on environment?

OR

- 5 (a) Discuss the requirements of an electrical charging system.
(b) What is a dynamo? Explain the working of a basic single loop dynamo with a neat sketch.

UNIT – III

- 6 Explain the working of a compound epi-cyclic gear train with a neat sketch.

OR

- 7 What is the purpose of a differential and explain its principle of working?

UNIT – IV

- 8 (a) Write a short note on: (i) Camber. (ii) Caster. (iii) Toe in and Toe out.
(b) Draw the layout of a typical axle beam steering linkage and explain.

OR

- 9 What is an independent suspension steering system? Explain its working with a neat sketch.

UNIT – V

- 10 With a neat sketch explain the construction and working of a rigid front axle.

OR

- 11 Draw the layout and explain the hydraulically operated braking system.
