

Code: 15A03701

B.Tech IV Year I Semester (R15) Regular Examinations November/December 2018

AUTOMOBILE ENGINEERING

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Name two methods of chassis construction.
 - (b) What are the materials used for chassis frame?
 - (c) What is clutch free pedal play?
 - (d) What is a synchronizer?
 - (e) What is steering ratio?
 - (f) Define perfect steering.
 - (g) What are the objectives of vehicle suspension?
 - (h) What is the function of a shock absorber?
 - (i) Which catalyst is employed for oxidizing HC and CO?
 - (j) Name any four automobile essential accessories.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 Draw schematic diagram, showing the layout of complete transmission system of a four wheeler automobile.

OR

- 3 What is the necessity of power steering? Describe the oil assisted power steering mechanism with the help of a simple diagram.

UNIT – II

- 4 Sketch and explain in detail universal joint.

OR

- 5 What is the function of a propeller shaft? Explain briefly the construction of a propeller shaft.

UNIT – III

- 6 Sketch and explain briefly Davis steering mechanism.

OR

- 7 Discuss in detail the Ackermann steering mechanism.

UNIT – IV

- 8 Discuss in detail the basic considerations of suspension system.

OR

- 9 Draw a simple diagram to show the layout of a pneumatic operated four wheel brake system and explain its working in detail.

UNIT – V

- 10 Explain the effect of the factors on the formation of NO_x in air pollution.

OR

- 11 Explain briefly the lighting system provided in a car and functions of each unit.
