



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 140702

Roll No.

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B. Tech.

(SEM. VII) (ODD SEM.) THEORY
EXAMINATION, 2014-15
AUTOMOBILE ENGINEERING

Time : 3 Hours]

[Total Marks : 100

1 Attempt any FOUR parts : **5×4=20**

- a) What is the function of a clutch? Discuss various factors affecting the torque transmission in a clutch.
- b) What is overdrive? Explain its construction and discuss its working briefly.
- c) Sketch Front axle of car and show how it is connected with the stub axle.
- d) Explain the terms :
 - I. Camber
 - II. Castor
 - III. Toe in

e) List the various factor affecting the over steer and under steer.

f) What is the function of universal joint? List its usage in vehicle.

2 Attempt any TWO parts : $10 \times 2 = 20$

a) Write a ten step procedure for design of a gear box of an automobile.

b) Briefly explain the variation of resistance to the vehicle motion at the various speeds and total resistance to the vehicle motion.

c) Describe the working of a synchromesh gear box with the help of a sketch. What are its merits and demerits?

3 Attempt any TWO parts : $10 \times 2 = 20$

a) Describe the air braking system with a neat sketch. State the advantages of it.

b) Write short notes on :

I. Telescopic shock absorber

II. Leaf Spring.

c) Explain transfer of weight during application. Discuss how it affect wheel skidding.

4 Attempt any TWO parts : $10 \times 2 = 20$

- a) Discuss in detail the comparison between the various ignition systems of an automobile.
- b) Discuss in detail the future trends for automotive lighting
- c) Describe in detail Multipoint Fuel injection system discussing the main system components

5 Attempt any TWO parts : $10 \times 2 = 20$

- a) What is the purpose of heating system in an automobile?
Describe the heating system with a neat diagram.
- b) Write short notes on Preventive maintenance.
- c) Discuss in detail the water cooling system for automotive engines.