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**Time : 2 Hours****Auto Transmission****Subject Code**

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**Total No. of Questions : 5****(Printed Pages : 4)****Maximum Marks : 50**

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- INSTRUCTIONS :**
- (i) All questions are compulsory.
  - (ii) Answer each question on a fresh page.
  - (iii) Write the number of each question and sub-question clearly.
  - (iv) Figures to the right indicate full marks.

1. (A) Answer the following questions in *one* sentence each :

- (i) What is the purpose of cushion spring in the clutch plate of single plate clutch ? 1
- (ii) What is the advantage of using thrust washer in the Differential unit ? 1
- (iii) State any *two* advantages of spokes type of wheel. 1
- (iv) Name different types of shackles used in the suspension system. 1
- (v) List out the components of mechanical braking system. 1
- (vi) State any *two* disadvantages of hydraulic braking system. 1

- (B) (i) Draw a neat labelled sketch of the Diaphragm Clutch. 2
- (ii) What is the purpose of providing more number of clutch plates in the multiplate clutch ? 2
2. (A) Answer the following questions in short :
- (i) Explain the working of centrifugal clutch. 2
- (ii) Define the term “Gradient Resistance”. 2
- (iii) Give functions of Gear Box. (any *four*) 2
- (B) (i) Draw a neat labelled sketch of the Constant Velocity Universal Joint. 2
- (ii) Distinguish between Hotchkiss Drive and Torque Tube Drive. (any *four* points) 2
3. (A) Answer the following questions in short :
- (i) Why Styrene Butadiene rubber is preferred in the modern tyres ? 2
- (ii) Write a short note on the vehicle chassis. 2
- (iii) State any *four* functions of the frame of the vehicle. 2
- (B) (i) Draw a neat labelled sketch of the semi-floating axle. 2
- (ii) Explain the constructional details of the Differential unit of a Car. 2

4. (A) Answer the following questions in short :
- (i) Give the constructional details of the conventional leaf spring type suspension system. 2
  - (ii) Define the following terms :
    - (a) Camber Angle 1
    - (b) Castor angle 1
  - (iii) State any *four* advantages of 'Rack and Pinion' Steering Gear. 2
- (B) (i) Draw a neat labelled sketch of the wishbone type independent suspension system. 2
- (ii) State any *four* requirements of the suspension system. 2
5. (A) Answer the following questions in short :
- (i) Explain Disc-brake of an Automobile. 2
  - (ii) What is the function of "Check Valve" in the master cylinder ? 2
  - (iii) What is the purpose of providing Synchronizing device in the gear box ? 2

- (B) (i) Draw a neat labelled sketch of the Worm and Roller Steering Gear Box. 2
- (ii) State the functions for the following components of the Steering System.
- (a) Steering Gear Box 1
- (b) Drop Arm or Pitman Arm 1