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**Time : 2 Hours****AUTO TRANSMISSION****Subject Code**

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**Total No. of Questions : 5****(Printed Pages : 3)****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 questions and subquestions clearly.
  - (iv) Figures to the right indicate full marks.

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

- (i) State any *two* advantages of Diaphragm clutch. 1
- (ii) Name the components of final drive. 1
- (iii) What is the purpose of breakers in Tyres ? 1
- (iv) Why are shock absorbers used in suspension system ? 1
- (v) Name the type of stub axle more popularly used in heavy duty vehicles. 1
- (vi) What is camber angle ? 1

(B) Explain the constructional details of multiplate clutch with a neat labelled sketch. 2+2

2. (A) Answer the following questions in short :
- (i) State any *four* good qualities the clutch plate should possess. 2
  - (ii) Define the term “Gradient Resistance”. 2
  - (iii) Explain in brief the Torque converter of an automobile. 2
- (B) Draw a neat labelled diagram of differential unit and explain its working. 2+2
3. (A) Answer the following questions in short :
- (i) State any *four* functions of a Gear Box. 2
  - (ii) Compare Hotchkiss drive with Torque tube drive. (any *four* points) 2
  - (iii) What are the functions of propeller shaft ? (any *four*) 2
- (B) Draw a neat labelled sketch of ‘Wishbone type’ independent suspension system and explain its constructional details. 2+2
4. (A) Answer the following questions in short :
- (i) List out any *four* requirements of a Road wheel. 2
  - (ii) State the various resistances which will be resisted by the following frame sections :
    - (a) Channel section 1
    - (b) Tubular section 1
  - (iii) State any *four* functions of a frame of an automobile. 2

- (B) Explain the working of worm and roller steering gear box with a neat labelled sketch. 2+2
5. (A) Answer the following questions in short :
- (i) Give the characteristics of suspension system. (any *four*) 2
- (ii) What is oversteer and understeer ? 2
- (iii) Explain the unloader valve and brake valve used in Air braking system. 2
- (B) Draw a neat labelled diagram of Disc brakes and explain its constructional details. 2+2