



**HCO-003-027904**

Seat No. \_\_\_\_\_

**M. Sc. (ECI) (Sem. IX) (CBCS) Examination**

**October – 2017**

**Paper - 36 : Automobile & Automotive Electronics**

**Faculty Code : 003**

**Subject Code : 027904**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :**
- (1) Each question carry equal marks.
  - (2) Figures on right hand side indicate marks.

**1** Answer the following : (any seven out of ten. Each carry 14 two marks)

- (a) What is an automobile vehicle ?
- (b) Classify the vehicle according to wheels and its transmission.
- (c) Briefly explain the necessity of clutch in every automobile vehicle.
- (d) List the types of frame in automobile.
- (e) Classify the vehicle according to its fuel use and its drive.
- (f) List the types of batteries in automobile vehicle.
- (g) List types of resistance when the vehicle encounters during the motion.
- (h) How many types of suspension systems are used in vehicle?
- (i) Give the advantages of rear engine rear wheel drive.
- (j) What is an applications of steering and break system in automobile?

- 2** Answer the following : (any **two** out of three)
- (a) Briefly explain for following chassis. 7
    - Semi forward chassis
    - Full forward at front chassis
  - (b) Describe a working principle of multi plate clutch. 7
  - (c) Differentiate torque converter and fluid coupling. 7
- 3** Answer the following :
- (a) Draw and explain cone clutch. 7
  - (b) Describe with sketch principle of epicyclic gearing. 7
- OR**
- 3** Answer the following :
- (a) Give any five advantages of automatic transmission. 5
  - (b) Give the classification of gear box. 5
  - (c) Differentiate single plate and multi plate clutch. 4
- 4** Answer the following :
- (a) Give the classification of various types of clutch. 7
  - (b) Draw sketch and explain vacuum operated clutch. 7
- 5** Answer the following : (any **two** out of four)
- (a) Explain the necessity of gear box in automobile. 7
  - (b) Write a short note on gear ratio. 7
  - (c) Draw only sketch of overdrive and list the advantages of overdrive. 7
  - (d) Briefly describe the function of battery. Explain construction of lead-acid battery with suitable example. 7