

# 315372

**12526**

**3 Hours / 70 Marks**

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
- (2) Answer each next main Question on a new page.
- (3) Illustrate your answers with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

- 1. Attempt any FIVE of the following :** **10**
- a) Define. Automobile, list major components of vehicle.
- b) State function and necessity of clutch.
- c) State advantages of front Engine front wheel drive vehicle layout.
- d) Enlist types of steering system used in Automobile.
- e) Differentiate tube type and tubeless tyres.
- f) Define battery rating in brief.
- g) Enlist different sensors used in Automobile.

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- 2. Attempt any THREE of the following :** **12**
- a) With neat sketch explain front Engine Rear Wheel Drive Layout.
  - b) Compare single plate clutch and multi plate clutch on basis of
    - i) Power transmission capacity
    - ii) Heat dissipation
    - iii) Size
    - iv) Application
  - c) Explain with neat sketch disc brake system
  - d) With neat sketch explain Macpherson strut suspension system with advantages.
- 3. Attempt any THREE of the following :** **12**
- a) With neat sketch explain torque convertor.
  - b) Compare Disc brake and drum brake system.
  - c) Compare Rigid Axle and independent suspension system.
  - d) Explain wheel balancing procedure.
- 4. Attempt any THREE of the following :** **12**
- a) Draw and explain with neat sketch of telescopic shock absorber and label it.
  - b) Describe construction and working of propeller shaft with sketch.
  - c) With block diagram explain concept of ABS.
  - d) State necessity and procedure of wheel alignment.
  - e) Define with neat sketch in detail.
    - i) Camber
    - ii) Caster

- 5. Attempt any TWO of the following :** **12**
- a) Explain with neat sketch construction, working of differential.
  - b) Explain construction and working of lead acid battery with neat sketch.
  - c) Explain in detail different load active on Chassis frame.
- 6. Attempt any TWO of the following :** **12**
- a) Draw & explain layout of electric vehicle? State its advantages & disadvantages.
  - b) With neat sketch explain semi floating type rear axle with application.
  - c) With neat sketch explain construction working, application of Raek and Pinion steering type gearbox system.
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