

# 22656

**12223**

**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 answer with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) 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) Compare front engine front wheel drive (FEFWD) with front engine rear wheel drive (FERWD) (Any four points)
- b) State working principle of centrifugal clutch.
- c) Define under steering and over steering.
- d) List components of a vehicle counted in sprung and un-sprung weight.
- e) Write principle of working lead acid battery
- f) Define HGV and MGV.
- g) State need of universal joint and slip joint used in propeller shaft.

P.T.O.

- 2. Attempt any THREE of the following. 12**
- a) List different frames used in automobile construction. Write functions of frame.
  - b) List various parts of synchromesh gear box with role of each component.
  - c) Describe working of Disk Brake. Draw a neat sketch.
  - d) Explain working of gas filled shock absorbers in brief. Draw a simple sketch for the same.
- 3. Attempt any THREE of the following. 12**
- a) Explain following terms related with car Aerodynamics.
    - i) Drag
    - ii) Lift
  - b) Explain Rack and Pinion type steering gear box with neat sketch.
  - c) State function and need of independent suspension system.
  - d) Explain working of starting system of a vehicle with neat sketch.
- 4. Attempt any THREE of following. 12**
- a) Explain necessity and importance of Cable Color Codes in automobile.
  - b) Explain Charging system of a vehicle with neat sketch.
  - c) Write silent features of Motor Vehicle Act 1989. Draw any 04 traffic signs and state meaning.
  - d) Enlist any four gauges and sensors with their functions.
  - e) Draw organization structure of Motor Vehicle (RTO) department. Write role of RTO.

- 5. Attempt any TWO of the following. 12**
- a) Describe torque converter with neat sketch. Compare it with fluid flywheel. (Any 2 points).
  - b) State need of ABS. Draw typical layout of ABS. Write in brief role different components.
  - c) List factors affecting tyre life. State the meaning of all terms involved in following tyre designation. **P215/65R16 95 H**
- 6. Attempt any TWO of the following. 12**
- a) State significance of live and dead axle. Describe semi floating axle with sketch.
  - b) Draw electronic ignition system. Compare it with conventional ignition systems. (Any four Points).
  - c) Describe in brief different passenger safety systems adapted in modern vehicles.
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