

17409

11819

3 Hours / 100 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any SIX of the following: 12
- (i) Define king pin inclination.
 - (ii) State the types of stubaxle arrangement.
 - (iii) List any two friction materials used for brake shoe.
 - (iv) State the purpose of compressor and evaporator used in car A.C.
 - (v) Write the purpose of the following:
 - (1) Service brake
 - (2) Parking brake
 - (vi) Compare drum and disc brake (any two points)
 - (vii) Draw a neat labelled sketch of reverse elliotte type stubaxle.
 - (viii) State the necessity of stabilizer bar.

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- b) **Attempt any TWO of the following:** **8**
- (i) Describe the working of collapsible steering with neat labelled sketch.
 - (ii) Explain the following terms:
 - (1) Traction
 - (2) Tractive effort
 - (iii) State various types of denting tools used for vehicle body repair.
2. **Attempt any FOUR of the following:** **16**
- a) Explain the working of electrical power assisted steering system with neat labelled sketch.
 - b) Draw a neat labelled sketch of front wheel assembly.
 - c) What do you mean by understeering and oversteering? Explain.
 - d) Describe the working of vacuum assisted braking system.
 - e) Describe anti-corrosive treatment for a vehicle.
 - f) Draw a neat labelled sketch of disc brake system.
3. **Attempt any FOUR of the following:** **16**
- a) Describe the working of hydraulic braking system with neat sketch.
 - b) Explain the following characteristics of friction material:
 - (i) Coefficient of friction
 - (ii) Brake fade
 - c) Describe the working of air suspension system with neat sketch. State its application.
 - d) State human comfort conditions used in car A.C. system.
 - e) State advantages and disadvantages of central locking of vehicle. (two each)
 - f) Compare McPherson strut with wishbone type suspension alongwith their sketches.

- 4. Attempt any TWO of the following:** **16**
- a) Describe the working of rack and pinion steering gear box with neat sketch. State its application.
 - b) Describe the air braking system with neat labelled sketch. State its two advantages.
 - c) Describe construction and working of gas filled shock absorber with neat labelled sketch.
- 5. Attempt any FOUR of the following:** **16**
- a) State four advantages of power steering.
 - b) Describe the painting procedure for used vehicle.
 - c) Draw a neat labelled sketch of semi - elliptical leaf spring.
 - d) List four properties of refrigerant.
 - e) Describe the working of wishbone type independent suspension system with neat sketch.
 - f) Explain the necessity of temperature control system.
- 6. Attempt any TWO of the following:** **16**
- a) State types of safety devices used in modern vehicle. Explain the working of air bag. State its application.
 - b) Describe the working of vapour compression cycle with its layout.
 - c) What is meant by 'Streamlined body'? Describe the effect of streamlined body on vehicle performance.
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