

17409

16172

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- 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, of 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 caster.
 - (ii) State the function of steering gear box.
 - (iii) State the function of brake in vehicle.
 - (iv) State necessity of air conditioning system.
 - (v) Define tractive effort.
 - (vi) List out any four components in air brake system.
 - (vii) Define toe-in and toe-out.
 - (viii) List out any four components in air suspension system.
- b) **Attempt any TWO of the following:** **8**
- (i) Explain working of emergency brake system.
 - (ii) Explain effect of streamline shape on vehicle performance.
 - (iii) Explain protective and anticorrosive treatment for car body.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) Draw neat and label sketch of recirculating ball type steering gear box.
 - b) Define and describe the effect of king pin inclination of wheel performance.
 - c) List out different types of stub axle and explain any two with diagram.
 - d) Differentiate between Drum and Disc type brake system.
 - e) Describe aluminium and plastics as body materials.
 - f) Describe different properties of brake fluids.
- 3. Attempt any FOUR of the following:** **16**
- a) Explain working of Antilock braking system.
 - b) Describe any two characteristics of brake lining material.
 - c) Identify various parts in semi-elliptical leaf spring and draw neat and label sketch.
 - d) Explain role of dehydrator and evaporator in Air conditioning system.
 - e) Explain construction of parking brake system.
 - f) State any two advantages and disadvantage of air bag.
- 4. Attempt any TWO of the following:** **16**
- a) Explain construction and working of “Front Wheel Assembly” with neat sketch.
 - b) Explain construction of disc type brake system with diagram and write its advantages and disadvantages.
 - c) Explain working of Mcpherson strut type suspension with diagram.

- 5. Attempt any FOUR of the following:** **16**
- a) State any four advantages of electrical power assisted steering system.
 - b) State any two advantages and disadvantages of central locking system.
 - c) Explain construction of telescopic type shock absorber with diagram.
 - d) State any four desirable properties of refrigerant.
 - e) Draw neat and label sketch of air suspension system.
 - f) Draw neat and label sketch of HVAC layout.
- 6. Attempt any TWO of the following:** **16**
- a) Describe painting and repainting procedure of vehicle body in details.
 - b) How temperature and humidity is controlled in car air conditioning?
 - c) Describe various resistance faced by vehicle and state effect of each resistance on vehicle performance.
-