

17409

15116

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) 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 and toe in.
- (ii) Draw a neat labelled sketch of reverse elliot type stub axle.
- (iii) List friction materials used for brake shoes and pads.
- (iv) Define the term air-conditioning.
- (v) Define drawbar pull and gradeability.
- (vi) List any four advantages of disk brake system.
- (vii) Define Turning radius.
- (viii) List types of suspension springs.

P.T.O.

b) Attempt any TWO of the following:

- (i) Explain anticorrosive treatment for vehicle.
- (ii) Define:
 - 1) Air Resistance
 - 2) Gradient Resistance
 - 3) Rolling
 - 4) Pitching
- (iii) List two advantages and two disadvantages of central locking system.

2. Attempt any FOUR of the following:**16**

- a) State effects of castor and camber.
- b) Draw neat sketch of front wheel assembly and label it.
- c) Explain Rack and Pinion type steering gear box with sketch.
- d) Classify brake system on the basis of Purpose, Location, Construction and method of actuation.
- e) Explain types of materials used in body construction.
- f) Explain with neat sketch construction of disc brakes.

3. Attempt any FOUR of the following:**16**

- a) State the concept and working of Anti-lock brake system.
- b) List four properties of brake fluid.
- c) Explain with sketch working of suspension system used in MARUTI 800.
- d) Write the functions of following components of car HVAC system.
 - (i) Condenser
 - (ii) Expansion valve
 - (iii) Evaporator
 - (iv) Blower fan
- e) Describe repainting procedure for old vehicle.
- f) Name four denting tools and write purpose of each.

4. Attempt any TWO of the following:**16**

- a) Explain electronic power steering with sketch. Give two applications of it.
- b) Explain vacuum assisted brake system with neat sketch.
- c) Draw a layout of Air suspension and describe its working.

- 5. Attempt any FOUR of the following:** **16**
- a) Explain conventional front axle with sketch.
 - b) Describe saloon and hatchback type vehicle body with examples.
 - c) Describe working of telescopic shock absorber.
 - d) State human comfort conditions used in car Air Conditioner.
 - e) Why antiroll bar is used? Describe working of antiroll bar for independent suspension with sketch.
 - f) Why humidity is to be controlled? How it is controlled?
- 6. Attempt any TWO of the following:** **16**
- a) Describe exhaust brake with neat sketch and write its applications.
 - b) Describe working of vapour compression cycle with sketch.
 - c) Describe stability of vehicle on slopes and turns.
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