

22653

12425

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) 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) Describe Radiation Heat transfer & Convection Heat transfer.
- (b) Name the type of case & duct system used in Maruti 800 & Maruti Alto.
- (c) State the application of uncontrolled ventilation.
- (d) State the function of sun load sensor.
- (e) State visual & acoustic check for AC system.
- (f) Mention types of thermostatic expansion valve.
- (g) State the function of coolant control valve in Automobile Heating System.

2. Attempt any THREE of the following :

12

- (a) Explain human comfort conditions used in Car Air Conditioner.
- (b) Give the general layout of Automotive AC system & state functions of each component.
- (c) Draw a neat labelled sketch of Electronic Climate Control System.
- (d) Explain the working of comfort heating with neat sketch.
- (e) Explain works of Air intake section with neat sketch.



- 3. Attempt any THREE of the following : 12**
- (a) Describe Environment & Safety Aspect of HVAC system.
 - (b) Select a suitable case & duct system for light motor vehicle with relevant justification.
 - (c) Describe the working of TXV with neat sketch.
 - (d) Explain the term “Comfort zone” with neat sketch.
- 4. Attempt any THREE of the following : 12**
- (a) Sketch drive system used for compressor & give their significance.
 - (b) State four precautionary measures required for packaging & storage of refrigerant.
 - (c) Describe with sketch working of in car temperature sensor.
 - (d) Describe with sketch procedure of leak testing of automobile air conditioning system.
- 5. Attempt any TWO of the following : 12**
- (a) Explain with neat sketch construction & working of rear heating system.
 - (b) Explain common faults, causes & remedies of compressor.
 - (c) Describe the working of blower clutch control system with neat sketch.
- 6. Attempt any TWO of the following : 12**
- (a) Explain construction & working of Electromagnetic Clutch.
 - (b) Explain construction & working of typical vacuum system.
 - (c) Explain with neat sketch construction & working of super heat switch.
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