

22653

22232

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) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

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| | Marks |
| 1. Attempt any FIVE of the following : | 10 |
| <ol style="list-style-type: none">(a) Define the terms radiation & evaporation.(b) What is the purpose of A.C. filter in HVAC system ?(c) Name the types of sections of case & duct system.(d) Name of the sensors in automobile climate control system.(e) Draw neat sketch of manifold gauge.(f) State the purpose of heating system of HVAC system.(g) Draw diagram of control valve in heating system. | |
| 2. Attempt any THREE of the following : | 12 |
| <ol style="list-style-type: none">(a) Describe the uncontrolled ventilation system.(b) Explain with neat sketch down stream duct system.(c) Draw the Vapour Compression Cycle (VCC) & explain in details.(d) Compare manual climate control system & electronic climate control system.(e) Explain with neat sketch rear heating & cooling system in automobile. | |



- 3. Attempt any THREE of the following : 12**
- (a) State environmental & safety aspect of HVAC system.
 - (b) Illustrate with sketch upstream blower case & duct system.
 - (c) Explain the working of reciprocating type air compressor in AC system.
 - (d) Explain the working of vacuum motor & vacuum relay.
- 4. Attempt any THREE of the following : 12**
- (a) How packaging & storage of refrigerant carried out ?
 - (b) Describe the procedure of leak test of AC system & its types.
 - (c) Explain the working of vacuum reserve tank.
 - (d) Explain with neat sketch Halogen leak test detector.
- 5. Attempt any TWO of the following : 12**
- (a) Describe types of ventilation system & explain ram air ventilation system.
 - (b) Enlist general faults that occur in AC system along with cause remedies.
 - (c) Explain procedure of Car heating system maintenance for optimum performance.
- 6. Attempt any TWO of the following : 12**
- (a) Draw and explain concept of Aspirator.
 - (b) Predict general faults occurs in AC compressor with cause & remedies (any four).
 - (c) Explain halide leak detector in details.
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