



17620

11718

3 Hours / 100 Marks

Seat No.

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Instruction : All questions are compulsory.

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| 1. a) Attempt any three of the following : | 12 |
| i) Explain controlled and uncontrolled ventilation. | |
| ii) Explain with neat sketch core section. | |
| iii) Describe construction and working of condenser. | |
| iv) Explain with neat sketch accumulator. | |
| b) Attempt any one of the following : | 6 |
| i) State the requirement of HVAC system in Automobile sector. | |
| ii) Explain with neat sketch Rear Heating System. | |
| 2. Attempt any four of the following : | 16 |
| a) Draw layout of Automobile Air conditioning system. | |
| b) State any four desirable properties of Refrigerant. | |
| c) Explain construction and working of scroll compressor. | |
| d) Explain 'Electromagnetic Clutch' with neat figure. | |
| e) Describe construction and working of 'Remote Bulb'. | |
| f) State the general faults and their remedies in comfort heating system. | |
| 3. Attempt any four of the following : | 16 |
| a) Explain modes of heat transfer. | |
| b) State safety aspects in HVAC system. | |
| c) Explain 'Thermostatic Expansion Valve' with neat sketch. | |
| d) Explain procedure of charging and discharging of A/c system. | |
| e) Explain the construction and working of high pressure switch. | |
| 4. a) Attempt any three of the following : | 12 |
| i) Explain construction and working of downstream duct system. | |
| ii) Compare Thermostatic expansion valve and Fixed orifice tube on any four aspects. | |
| iii) Explain with neat sketch 'Halide Leak Detector'. | |
| iv) State function and location of 1) Sun load sensor and 2) Outside temp. sensor. | |

P.T.O.



b) Attempt **any one** of the following :

6

- i) Explain working of 'Comfort Heating System' with neat sketch.
- ii) Explain with (neat sketch) block diagram Electronic Climate Control System.

5. Attempt **any four** of the following :

16

- a) Explain construction and working of 'Vacuum Motor'.
- b) State cause of fault and remedy of compressor.
- c) Explain 'Leak Test' and 'Temp. Test' of A/C system.
- d) Explain working of typical vacuum system.
- e) Explain the drive system for compressor in automobile air conditioning.
- f) Describe fluorescent leak detector.

6. Attempt **any four** of the following :

16

- a) Explain working of rotary vane air cycle system with neat sketch.
 - b) State the concept of aspirator and time delay.
 - c) Explain working of 'High Pressure Switch'.
 - d) Explain construction and purpose of 'Vacuum Reserve Tank'.
 - e) Explain working and state location of 'Check Valve'.
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