

April 2019*Time – Three hours
(Maximum Marks: 75)*

*IN.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory.
Answer any FOUR questions from the remaining in each PART – A
and PART – B*

(2) Answer division (a) or division (b) of each question in PART – C.

*(3) Each question carries 2 marks in PART – A, 3 marks in Part – B
and 10 marks in PART – C.]*

PART – A

1. How the expansion valve is calibrated?
2. What do you mean by automatic heater?
3. Write about the handling of refrigerants.
4. What do you mean by ozone depletion level?
5. What are the duct systems used in an automobile?
6. What do you mean by vacuum reverse?
7. How the leak testing is carried out?
8. What is the need for an air-conditioning system in a car?

PART – B

9. How the fresh air supply is maintained in an automobile air conditioning system?
10. How the evaporator temperature is controlled?
11. List any two drawbacks of manually controlled air-conditioning system of a vehicle.
12. Discuss about the automatic temperature control system.
13. What are the objectives of air routing temperature control?
14. What are the major causes of air conditioner failure?
15. How the heater system in an air conditioner is serviced?
16. How the refrigerants are designated?

[Turn over.....]

PART - C

17. (a) Draw the schematic layout of a refrigeration system fitted in a car and explain the functions of the main components of the system.
- (Or)
- (b) (i) Explain the construction and working of the compressor components.
(ii) Explain the construction and working of a thermostatic expansion valve.
18. (a) Explain the ford automatic air-conditioner and heating system with neat sketches.
- (Or)
- (b) Discuss briefly about the protection of air-conditioner unit and engine unit of a car.
19. (a) Explain the classifications of refrigerants with suitable examples.
- (Or)
- (b) (i) Discuss about the causes, impact and alternative solutions to global warming potential.
(ii) Discuss briefly about alternative refrigerants.
20. (a) Explain the air flow through the dash board re-circulation unit with neat sketches.
- (Or)
- (b) (i) Discuss about the automatic temperature control system in an automobile.
(ii) Explain the testing of air control and handling systems with neat sketches.
21. (a) Discuss briefly about any ten major problems occur in an automobile air conditioner unit, its causes and remedies.
- (Or)
- (b) Discuss briefly about the servicing of air compressors.