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B VOC
(SEM-V) THEORY EXAMINATION 2021-22
AUTOMOBILE AIR CONDITIONING

Time: 3 Hours**Total Marks: 30****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****1 x 6 = 6**

Qno.	Question	Marks
a.	What is one ton of refrigeration?	1
b.	Discuss HVAC in automobile.	1
c.	Explain the most commonly used method for the design of duct size.	1
d.	Explain the advantages of vapor absorption refrigeration system over vapor compression refrigeration system.	1
e.	In the absorption refrigeration system, the compressor of the vapor compression system is replaced by which components. Explain.	1
f.	Give reason(s) for the foggy windows of a vehicle during winters. How it can be prevented without opening any window.	1

SECTION B**2. Attempt any three of the following:****3 x 3 = 9**

Qno.	Question	Marks
a.	Discuss desirable properties of an ideal refrigerant.	3
b.	Explain various factors affecting the human comfort.	3
c.	What are the uses of psychometric chart? Explain heating with humidification through psychometric chart.	3
d.	Explain the use of relays in automobile air-conditioning.	3
e.	Discuss various steps clearly for air conditioning servicing in a vehicle.	3

SECTION C**3. Attempt any one part of the following:****1 x 3 = 3**

Qno.	Question	Marks
a.	Discuss different types of refrigerants used in automobile.	3
b.	Explain cooling and dehumidification with the help of psychometric chart.	3

4. Attempt any one part of the following:**1 x 3 = 3**

a.	Draw a general electrical wiring circuit for air-conditioning in any car. Also explain briefly the components used.	3
b.	What are various eco friendly refrigerants? Explain common properties for any one such refrigerant.	3

5. Attempt any one part of the following:**1 x 3 = 3**

a.	How air conditioning load affects fuel consumption in vehicle? Explain with one example.	3
b.	Discuss different factors affecting the load on air-conditioning in a vehicle	3

6. Attempt any one part of the following:**1 x 3 = 3**

a.	What is dashboard re-circulating unit in a vehicle? Explain	3
b.	How air noise level in a vehicle can be reduced? Discuss.	3

7. Attempt any one part of the following:**1 x 3 = 3**

a.	Explain various air-conditioning control methods used in an automobile.	3
b.	What is the method of refrigerant gas charging? Explain.	3