Q. Code:692641

Reg. No. | | | | | | | | | | | | | | |

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Eighth Semester

AE18008 – AUTOMOTIVE AIR CONDITIONING

(Automobile Engineering)

(Regulation 2018/2018A)

TIME:3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Discuss the fundamentals of automotive air conditioning	**3**
CO 2	Describe the constructional details and working of automotive cooling and heating system.	**3**
CO 3	Outline the air condition controls, delivery system and refrigerants.	**4**
CO 4	Explain the functions of automatic temperature control employed in automotive air conditioning.	**4**
CO 5	Discuss servicing and testing of air conditioning components.	**3**

PART- A(10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	What is the purpose of silica gel in a receiver drier in an air conditioning system?	**1**	**1**
2.	Mention the location of compressor, evaporator and thermostatic expansion valve and condenser in a vehicle air-conditioning system.	**1**	**1**
3.	How will you check the condition (Electrical aspect) of a relay?	**2**	**2**
4.	What are the advantages of mineral oil as lubricants?	**2**	**1**
5.	What is meant by recirculating and ventilated mode of air routine passage?	**3**	**1**
6.	What is meant by vacuum pot?	**3**	**2**
7.	What are the different types of sensors used in a vehicle air conditioning system?	**4**	**1**
8.	Distinguish between manual air conditioning and fully automatic air conditioning system.	**4**	**2**
9.	How will you check the operating pressure of an air conditioning system.	**5**	**2**

10.	What is the role of cooling system in an air conditioning system?			**2**
				5	

PART- B (5x 14=70Marks)

		Marks	CO	RBT LEVEL
11. (a)	Discuss the constructional details and working of thermostatic expansion valve.	**(14)**	**1**	**3**
	(OR)			
(b)	How does the refrigerant affect the ozone layer? Explain in details.	**(14)**	**1**	**3**
12. (a)	Illustrate the constructional details and working of reciprocating compressor used in a vehicle air conditioning system.	**(14)**	**2**	**3**
	(OR)			
(b)	Explain the refrigerant discharging and charging procedure in a vehicle with neat sketches.	**(14)**	**2**	**3**
13. (a)	Discuss the bi-level air routine passage of a vehicle air conditioning system with neat sketches. Also, analyze the various systems of air passage.	**(14)**	**3**	**4**
	(OR)			
(b)	Draw and explain an automotive electrical system used in an air conditioning system and explain how the circuit is diagnosed using test lamp.	**(14)**	**3**	**4**
14. (a)	Discuss and analyze any four sensors used in an automatic air conditioning system.	**(14)**	**4**	**4**
	(OR)			
(b)	Explain the constructional details and working of a dual position actuator. Also, analyze various methods to be used to directional control of a motor.	**(14)**	**4**	**4**
15. (a)	Explain the constructional details and working of a pressure gauge set used to diagnose the air conditioning system.	**(14)**	**5**	**3**
	(OR)			
(b)	Draw and discuss an electrical circuit of a cooling fan.	**(14)**	**5**	**3**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Illustrate the diagnosing procedure of an air conditioning system with neat sketches.	**(10)**	**5**	**3**

****