

**Skill Development and Entrepreneurship Department**  
**Directorate of Vocational Education and Training**  
**Directorate of Skill Development, Employment and Entrepreneurship**  
**Question Paper Group Name: Mechanical-7**  
**Question Paper Post Names: Craft Instructor – Mechanic Refrigeration & Air Conditioning**

Duration: 60 Minutes

Total Question: 40

**INSTRUCTIONS**

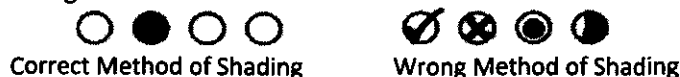
1. This Question Paper Booklet contents 40 mandatory questions. Candidate should check the Question Paper Booklet and ensure that it contains all pages and questions before starting to answer. If candidate finds any problem pertaining to printing/ binding/ incomplete pages etc, candidate should immediately get the Question Paper replaced from the Invigilator.
2. Candidate has to write his/ her seat number in this block. 

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3. The Question Booklet Number as printed above should be mentioned at the appropriate place on the OMR Answer Sheet.
4. All the Questions are provided with 4 options as 1, 2, 3 and 4. Candidate should select the most correct Option and mention the Option Number on the OMR Answer Sheet in front of the respective Question Number by **fully shading the Option Number with BLACK INK BALL POINT PEN Only.**
5. All Questions carry equal marks i.e. 1 Question has a weightage of 1 marks. Candidate should mind the available time for the examination and solve the questions accordingly.
6. The option shaded once on the OMR Answer Sheet should not be roughed or in any other way changed. Thus candidate should take utmost care while marking their options on OMR Answer Sheet. Such changes if any or any attempt to rough/ change options shall not be checked by the authorities.
7. Marks shall be awarded to the correct answers only during the evaluation of the OMR Answer Sheet. No marks shall be deducted for registering wrong answers (shading wrong option) or not attempting questions. Thus there is **NO NEGATIVE MARKING SYSTEM.**
8. All the rough work has to be done on the sheet provided for Rough Work in the Question Booklet only. Writing anything on the Question Paper Booklet, OMR Answer Sheet or any other Paper Sheet shall be treated as an unfair means and entitle for action under "**Prohibition of Unfair Practices during examination Ordinance – 1982**".
9. Method of Shading the Correct Option on the OMR Answer Sheet:

Q.No. 25. How many Centimeters make 1 Meter?

- |          |           |
|----------|-----------|
| (1) 10   | (2) 100   |
| (3) 1000 | (4) 10000 |

The Correct Option for this Question is (1) and hence the (2) option on the OMR Answer Sheet in front of Question Number 25 has to be shaded as following

**USE ONLY BLACK INK BALL POINT PEN FOR SHADING****IMPORTANT**

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**THIS QUESTION PAPER BOOKLET AND PART – 1 OF OMR ANSWER SHEET HAVE TO BE SUBMITTED TO THE INVIGILATOR AFTER THE EXAMINATION.**

1. Four basic components of a vapour compression refrigeration system are

1. Absorber, rectifier, pump, expansion valve
2. Compressor, generator, evaporator, capillary
3. Compressor, condenser, expansion valve, evaporator
4. Evaporator, compressor, absorber, generator

2. Function of the compressor in refrigeration system is

1. To increase the pressure of air
2. To increase the temperature of air
3. To increase the pressure of the refrigerant
4. To increase the pressure and temperature of the vapour refrigerant

3. Unit of refrigeration is

1. Kilojoules
2. Newtons
3. Bar
4. Tonnes of refrigeration

4. During refrigeration process, the heat is rejected by the refrigerant in the

1. Compressor
2. Condenser
3. Evaporator
4. Absorber

5. The colour of the flame of halide torch in case of leakage of Freon refrigerant will change to

1. Bright green
2. Yellow
3. Red
4. Orange

6. The refrigerant widely used in domestic is

1. Ammonia
2. Carbon – dioxide
3. Sulphur dioxide
4. R-12

7. The natural convection air cooled condensers are used in

1. Domestic refrigerators
2. Water coolers
3. Room air conditioners
4. All the above

8. In refrigeration system, the expansion device is connected between

- |                             |                              |
|-----------------------------|------------------------------|
| 1. Compressor and condenser | 2. Condenser and receiver    |
| 3. Receiver and evaporator  | 4. Evaporator and compressor |

9. The temperature of air recorded by a thermometer when it is not affected by moisture in it is called

- |                          |                         |
|--------------------------|-------------------------|
| 1. Wet bulb temperature  | 2. Dry bulb temperature |
| 3. Dew point temperature | 4. All the above        |

10. For unsaturated air, the dew point temperature is \_\_\_\_\_ the wet bulb temperature.

- |              |                          |
|--------------|--------------------------|
| 1. Equal to  | 2. Less than             |
| 3. More than | 4. Equal to or less than |

11. The cause of formation of ice in a storage tank of water cooler may be due to

- |   |                                    |
|---|------------------------------------|
| 1. Loose thermostat contacts                | 2. Faulty setting of LP. HP cutout |
| 3. Mixing of lubricant oil with refrigerant | 4. None of the above               |

12. Primary refrigerant used in cold storage plant is

- |            |                  |
|------------|------------------|
| 1. Air     | 2. Brine         |
| 3. Ammonia | 4. All the above |

13. Poor condensation may be due to

- |  |                               |
|--|-------------------------------|
| 1. Fan blade bent or cracked                       | 2. Fan motor bearing worn out |
| 3. Too much dust accumulator on the condenser coil | 4. All the above              |

14. Sling psychrometer is used to measure

- |        |                      |
|--------|----------------------|
| 1. DBT | 2. Absolute humidity |
| 3. WBT | 4. DBT and WBT       |

15. Psychrometry is a science which deals with the study of

- |                  |                              |
|------------------|------------------------------|
| 1. Refrigeration | 2. Heat transfer             |
| 3. Human comfort | 4. Air and properties of air |

16. In air conditioning applications the air flow measurement is made with the help of

- |                |                       |
|----------------|-----------------------|
| 1. Dynamometer | 2. Sling psychrometer |
| 3. Anemometer  | 4. None of the above  |

17. A house wife complains of excessive frosting of the cooling cabinet.

Technician A says door gasket may be damaged

Technician B says thermostat sensing bulb may be broken. Who is correct?

- |   |                            |
|---|----------------------------|
| 1. Technician A is correct                        | 2. Technician B is correct |
| 3. Both technician A and technician B are correct |                            |
| 4. Both technician A and technician B are wrong   |                            |

18. An alternative refrigerant for R-12 is

- |           |                      |
|-----------|----------------------|
| 1. R-1349 | 2. R-52              |
| 3. R-114  | 4. None of the above |

19. In case of leakage of refrigerant an electronic tester will

- |                                       |                        |
|---------------------------------------|------------------------|
| 1. Display the pressure in the system | 2. Make a buzzer sound |
| 3. Put on a indicator light           | 4. None of the above   |

20. An bi-metallic overload protector

1. is connected in parallel with the motor winding
2. Opens the electric circuit if excessive current is drawn by the compressor
3. Close the circuit if low current is drawn by the compressor
4. None of the above

21. Due to under charge

1. The temperature in the freezer compartment will decrease
2. The temperature in the freezer compartment will increase
3. The pressure in the system will decrease
4. The pressure in the system will increase

22. Condenser is a device which is used to

1. Convert liquid refrigerant into vapour refrigerant
2. Convert high vapour refrigerant into high pressure liquid refrigerant
3. Reduce the pressure of the refrigerant
4. Increase the pressure of the refrigerant

23. Outdoor unit of split air conditioner consists of

1. Condenser, fan motor, compressor, electrical component
2. Evaporator, Condenser & electrical component
3. Compressor, condenser, evaporator, expansion valve
4. Condenser and compressor

24. Air condition mean

1. Cooling of air
2. Heating of air
3. Simultaneous control of air purity and air temp
4. Simultaneous control of air temperature, humidity air motion and air purity

25. Alternative refrigerant should have

1. Low ODP
2. High GWP
3. Low latent heat of vapour satin
4. Low ODP and low GDP

26. Dehumidifiers are used in central A/c plant to

1. Increase the moisture content in air
2. Decrease the dust particles in air
3. Decrease the humidity of air
4. None of the above

27. To measure the voltage in electrical circuit

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 1. Voltmeter is connected in series | 2. Voltmeter is connected in parallel |
| 3. Ammeter is connected in series   | 4. Ammeter is connected in parallel   |

28. Oil separator in refrigeration cycle is installed

- |                                     |  |
|-------------------------------------|--|
| 1. Before compressor                | 2. Between compressor and condenser      |
| 3. Between condenser and evaporator | 4. Between condenser and expansion valve |

29. Freon 12 is a compound consisting of atoms of

- |  |                                  |
|--|----------------------------------|
| 1. Carbon, hydrogen and fluorine           | 2. Carbon, hydrogen and oxygen   |
| 3. Carbon, hydrogen, fluorine and chlorine | 4. Carbon, fluorine and chlorine |

30. Coefficient of performance is defined as

- |   |                                   |
|---|-----------------------------------|
| 1. $\frac{\text{refrigerating effect}}{\text{compressor work}}$ | 2. Heat removed by the evaporator |
| 3. Heat rejected by the condenser                               | 4. None of the above              |

31. A hermetic compressor is

- |  |                           |
|--|---------------------------|
| 1. A reciprocating compressor                          | 2. A valveless compressor |
| 3. A factory sealed unit contains motor and compressor | 4. None of the above      |

32. Defrosting of evaporator is done because

- |                               |  |
|-------------------------------|--|
| 1. Frosting is undesirable    | 2. Frosting increases refrigeration effect |
| 3. Frosting retards heat flow | 4. Frosting obstructs flow of refrigerant  |

33. Process of rectification is

- |   |   |
|---|---|
| 1. Conversion of AC current to DC current | 2. Conversion of DC current to AC current |
| 3. Amplification of voltage               | 4. None of the above                      |

34. The refrigerant pipe in refrigeration applications are joined by

- |            |                      |
|------------|----------------------|
| 1. Welding | 2. Soldering         |
| 3. Brazing | 4. None of the above |

35. For comfort air conditioning the general conditions of temperature and humidity are

- |                            |                            |
|----------------------------|----------------------------|
| 1. Around 20° C and 60% RH | 2. Around 12° C and 80% RH |
| 3. Around 30° C and 30% RH | 4. Around 10° C and 50% RH |

36. The SI unit of electric charge is

- |            |           |
|------------|-----------|
| 1. Coulomb | 2. Ampere |
| 3. Volts   | 4. Ohms   |

37. Ohm's law state that

- |                      |                      |
|----------------------|----------------------|
| 1. $I = \frac{V}{R}$ | 2. $V = \frac{I}{R}$ |
| 3. $R = \frac{I}{V}$ | 4. $R = \frac{I}{C}$ |

38. When Freon-12 is used as a refrigerant, the condenser & Evaporator cables are made of

- |             |              |
|-------------|--------------|
| 1. Steel    | 2. Cast iron |
| 3. Aluminum | 4. Copper    |

39. One ton of refrigeration is equivalent to

- |            |           |
|------------|-----------|
| 1. 1 KW    | 2. 2.5 KW |
| 3. 3.51 KW | 4. 5 KW   |

40. Which of the refrigerant is highly toxic?

- |                    |                    |
|--------------------|--------------------|
| 1. R-12            | 2. R-22            |
| 3. CO <sub>2</sub> | 4. Sulphur dioxide |

SPACE FOR ROUGH WORK

SE  
  
SE