

CBSE | DEPARTMENT OF SKILL EDUCATION

AIR CONDITIONING AND REFRIGERATION (SUBJECT CODE-827)

CLASS XII (SESSION 2021-2022) BLUE-PRINT FOR SAMPLE QUESTION PAPER FOR TERM -1

Max. Time Allowed: 90 Minutes (1½ Hrs.)

Max. Marks: 30

PART A - EMPLOYABILITY SKILLS (05 MARKS):

UNIT NO.	NAME OF THE UNIT	NO. OF QUESTIONS (1 MARK EACH)
1	Communication Skills-IV	2
2	Self-Management Skills-IV	2
3	Information and Communication Technology Skills-IV	2
TOTAL QUESTIONS		6 Questions
NO. OF QUESTIONS TO BE ANSWERED		Any 5 Questions
TOTAL MARKS		1 x 5 = 5 marks

PART B - SUBJECT SPECIFIC SKILLS (25 MARKS):

UNIT NO.	NAME OF THE UNIT	NO. OF QUESTIONS (1 MARK EACH)
1	Psychrometry	8
2	Heat Transfer and Air Distribution	9
3	Components of Refrigeration System	15
TOTAL QUESTIONS		32 Questions
NO. OF QUESTIONS TO BE ANSWERED		25 Questions
TOTAL MARKS		1 x 25 = 25 MARKS

CBSE | DEPARTMENT OF SKILL EDUCATION

AIR CONDITIONING AND REFRIGERATION

(SUBJECT CODE-827)

CLASS XII (SESSION 2021-2022) SAMPLE QUESTION PAPER FOR TERM -1

Max. Time Allowed: 90 Minutes (1½ Hrs.)

Max. Marks: 30

General Instructions:

1. Please read the instructions carefully
2. This Question Paper is divided into 03 sections, viz., Section A, Section B and Section C.
3. Section A is of 05 marks and has 06 questions on Employability Skills.
4. Section B is of 20 marks and has 25 questions on Subject Specific Skills.
5. Section C is of 05 marks and has 07 competency-based questions.
6. Do as per the instructions given in the respective sections.
7. Marks allotted are mentioned against each section/question.
8. All questions must be attempted in the correct order

SECTION A

Answer any 5 questions out of the given 6 questions on Employability Skills

(1 x 5 = 5 marks)

1.	Which one of the followings is a source of motivation and inspiration? (a)Activities and Books (b)Books and Music (c)Activities and Music (d)Activities, Books and Music	
2.	This bar of calc screen contains icons(buttons) to provide quick access to commands such as New, Open, print, Copy and paste etc. which is this bar (a) Standard Bar (b) Menu Bar (c) Title Bar (d) Mode Bar	1
3.	Every sentence can be broken into how many parts (a)Two (b) Three (c) Four (d) Cannot be broken	1

4.	Which combination of keys do you use to undo the last things you did (a) Ctrl + B (b) Ctrl + V (c) Ctrl + S (d) Ctrl + Z	1
5.	Personality is shaped through (a) Society and Family (b) Society, Family and Culture (c) Culture and Society (d) Family and Culture	1
6.	The number of parts of speech are (a)Six (b)Four (c)Eight (d) Two	1

SECTION B

Answer any 20 questions out of the given 25 questions

(1 x 20 = 20 marks)

7.	The high pressure vapour refrigerant is converted into high pressure liquid in (a)Evaporator (b)Condenser (c)Capillary (d)Compressor	1
8.	The infiltrated air increases which type of load in an air conditioned space? (a)Latent heat load (b)Sensible heat load (c)Latent and sensible heat load both (d)None of the above	1
9.	In a re-circulated water system condenser which one of the following is re-circulated again after cooling (a)Air (b)Air and water (c)Refrigerant (d)Water	1
10.	In a sensible heating process, the change takes place in D.B.T. of air is (a)Decrease (b)Increase (c)No change (d)Decrease and increase both	1

11.	<p>The air cooled condensers employing fans or blowers to provide air circulation are known as</p> <p>(a) Forced convection air cooled condensers (b) Natural convection air cooled condensers (c) Water cooled condensers (d) Evaporative condensers</p>	1
12.	<p>The material used for isolating the warm surroundings from the cold refrigerated spaces is known as</p> <p>(a) Electrical conducting material (b) Thermal conducting material (c) Electrical insulating material (d) Thermal insulating material</p>	1
13.	<p>The dehumidification of air will only be possible when the temperature of the cooling coil is</p> <p>(a) Above the D.P.T. of air (b) Below the D.P.T. of air (c) Above the D.B.T. of air (d) Below the D.B.T. of air</p>	1
14.	<p>Baudelot coolers are commonly employed for</p> <p>(a) Freezing of meat (b) Cooling of space (c) Chilling of milk (d) Heating of milk</p>	1
15.	<p>The constant pressure expansion valve is also known as</p> <p>(a) Capillary (b) Thermostatic expansion valve (c) Automatic expansion valve (d) Solenoid valve</p>	1
16.	<p>To supply the conditioned air from conditioning plant to the occupied space which one of the followings is used</p> <p>(a) Tubes (b) Fans (c) Ducts (d) Blowers</p>	1
17.	<p>Which one among the followings is not used as a water cooled condenser?</p> <p>(a) Shell and tube condenser (b) Shell coil condenser (c) Double tube condenser (d) Natural convection condenser</p>	1

18.	<p>Fins are used on heat transfer surfaces to</p> <p>(a) Maintain the constant heat transfer rate</p> <p>(b) Increase the heat transfer rate</p> <p>(c) Decrease the heat transfer rate</p> <p>(d) All of the above</p>	1
19.	<p>The shell and coil evaporators are generally operated as</p> <p>(a) Flooded evaporator</p> <p>(b) Dry expansion evaporator</p> <p>(c) Air coolers</p> <p>(d) Ice freezers</p>	1
20.	<p>An air washer can be used to meet which of the following purpose?</p> <p>(a) Air cleaning, Humidification and Heating</p> <p>(b) Humidification, Dehumidification and Heating</p> <p>(c) Air cleaning, Dehumidification and Heating</p> <p>(d) Air cleaning, Humidification and Dehumidification</p>	1
21.	<p>In a domestic refrigerator the type of evaporator used is</p> <p>(a) Double pipe type evaporator</p> <p>(b) Shell and tube evaporator</p> <p>(c) Plate type natural convection evaporator</p> <p>(d) Shell and Coil evaporator</p>	1
22.	<p>In a window air conditioner, the device used for reducing the pressure of liquid refrigerant is</p> <p>(a) High side float valve</p> <p>(b) Low side float valve</p> <p>(c) Solenoid valve</p> <p>(d) Capillary tube</p>	1
23.	<p>The process of sensible cooling is represented on psychrometric chart by a horizontal line extending from</p> <p>(a) Bottom to top</p> <p>(b) Top to bottom</p> <p>(c) Right to left</p> <p>(d) Left to right</p>	1
24.	<p>Which one of the following is not a method of duct design</p> <p>(a) Loop perimeter system</p> <p>(b) Equal friction loss method</p> <p>(c) Static regain method</p> <p>(d) Velocity reduction method</p>	1

25.	The device used to maintain the required pressure difference between condenser and evaporator of a refrigeration system is (a)Compressor (b)Condenser (c)Expansion device (d)Evaporator	1
26.	Which one of the followings is not a mode of heat transfer (a)Conduction (b)Stream (c)Radiation (d)Convection	1
27.	The flooded evaporator is always kept filled with (a)Water (b)Milk (c)Liquid refrigerant (d)Wine	1
28.	D.B.T. increases on psychrometric chart on moving from- (a)Left to right (b)Right to left (c)Downwards (d)Upwards	1
29.	The refrigeration system using capillary as expansion device must be free from (a)Dirt and Moisture (b)Dirt, Moisture and Foreign particles (c)Dirt and Foreign particles (d)Moisture	1
30.	The ability of a material to retard the flow of heat is given by its (a)Temperature capacity (b)Thermal conductivity (c)Electric conductivity (d)Cooling capacity	1
31.	Sensible heating or sensible cooling does affect (a)Specific humidity of air (b)Moisture content of air (c)Relative humidity of air (d)D.B.T. of air	1

SECTION C
(COMPETENCY BASED QUESTIONS)

Answer any 5 questions out of the given 7 questions

(1 x 5 = 5 marks)

32.	A condenser in the refrigeration system removes which type of the heat of refrigerant vapour? (a)Sensible heat (b)Latent heat (c)Sensible and latent heat both (d)Neither sensible heat nor latent heat	1
33.	Enthalpy or sensible heat of dry air can be measured by measuring the (a)W.B.T. of air (b)D.B.T. of air (c)D.P.T. of air (d)R.H. of air	1
34.	The heat from the sun comes to the earth by which one mode of the heat transfer? (a)Conduction (b)Convection (c)Radiation (d)Conduction and convection both	1
35.	The mass of water vapour per unit mass of dry air in a mixture of dry air and water vapour is known as (a)Absolute humidity (b)Degree of saturation (c)Relative humidity (d)Specific humidity	1
36.	The instrument used for measuring velocity of air stream in ducts is (a)Thermometer (b)Anemometer (c)Psychrometer (d)Glucometer	1
37.	Which metal among the followings is used for making the coils of condenser used in an Ice Plant using the ammonia as refrigerant? (a)Al (b)Cu (c)Ag (d)Fe	1
38.	The resistance offered by a capillary tube in the flow of liquid refrigerant is inversely proportional to the (a)Length of the capillary tube (b)Diameter of the capillary tube (c)Length and diameter both of the capillary tube (d)None of the above	1