

# **CBSE – DEPARTMENT OF SKILL EDUCATION**

## **AIR-CONDITIONING & REFRIGERATION (SUBJECT CODE-827)**

### **Sample Question Paper**

### **Class XII (Session 2019–2020)**

Time: 3 Hours

Max. Marks: 60

#### **General Instructions:**

1. This Question Paper consists of two parts viz. Part A: Employability Skills and Part B: Subject Skills.

#### **Part A: Employability Skills (10 Marks)**

- i. Answer any 4 questions out of the given 6 questions of 1 mark each.
- ii. Answer any 3 questions out of the given 5 questions of 2 marks each.

#### **Part B: Subject Skills (50 Marks):**

- iii. Answer any 10 questions out of the given 12 questions of 1 mark each.
  - iv. Answer any 5 questions from the given 7 questions of 2 marks each.
  - v. Answer any 5 questions from the given 7 questions of 3 marks each.
  - vi. Answer any 3 questions from the given 5 questions of 5 marks each.
2. This question paper contains 42 questions out of which 30 questions are to be answered.
3. All questions of a particular part/section must be attempted in the correct order.
4. The maximum time allowed is 3 hrs.

## **PART A: EMPLOYABILITY SKILLS (10 MARKS)**

**Answer any 4 questions out of the given 6 questions of 1 mark each:**

1.	_____ signals are the part of body language, Non - Verbal Communication. a. Eye Contact b. Aura / Vibes c. Facial Expressions d. All of the these	(1)
2.	Physiological motivation directs the behaviour towards satisfying specific _____ need.	(1)
3.	A workbook, by default, opens how many worksheets. a) 4 b) 3 c) 2 d) 5	(1)

4.	Identify the types of Business Activities. a) Manufacturing, Trading, Services b) Trading, Services, Marketing c) Services, Trading, Approaching customers d) Manufacturing, Services, Maintenance	(1)
5.	'Tourists are buying experience not product'. The given statement is appropriate for which sector of green jobs? a. Tourism b. Building and construction c. Solar and wind power	(1)
6.	Personality is relatively enduring set of _____.	(1)

**Answer any 3 questions out of the given 5 questions of 2 marks each:**

7.	How is the Active Listening important for a worker?	
8.	Describe physiological motivation?	
9.	Write down the steps to change the row height.	
10.	Discuss any two types of customer needs.	
11.	Provide list of any four green jobs in building and construction sector.	

## **PART B: SUBJECT SKILLS (50 MARKS)**

**Answer any 10 questions out of the given 12 questions:**

12.	Define Psychrometry.	(1)
13.	Define Humidification.	(1)
14.	Define Conduction.	(1)
15.	Heat always flows from _____ to low _____ by itself.	(1)
16.	Combined effect of _____ and _____ is used in evaporative condensers for removal of heat of vapour Refrigerant.	(1)

17.	_____type condenser are used in beverage industries.	(1)
18.	Low pressure cutout is used as _____and _____in Refrigeration plants.	(1)
19.	Over load protector is connected in _____with motor in a refrigerator.	(1)
20.	_____tanks are used to remove Ice from Ice-cans.	(1)
21.	_____is used in an Ice-plant as a secondary refrigerant.	(1)
22.	F.C.U. is used in an_____Air-Conditioning system.	(1)
23.	A.H.U. is used in an_____Air-conditioning system.	(1)

**Answer any 5 questions out of the given 7 questions of 2 marks each:**

24.	Explain cooling with adiabatic humidification and show the process on psychrometric chart.	(2)
25.	What do you mean by cooling load and air-quantities in an air-distribution system?	(2)
26.	Explain the function of a Drier used in a refrigeration system.	(2)
27.	What is brine? Explain why it is used in Refrigeration.	(2)
28.	Explain the function of overload protector in a refrigerator.	(2)
29.	Explain why the refrigeration system is used in Dairies.	(2)
30.	What is a Fan-coil unit.(FCU).	(2)

**Answer any 5 questions out of the given 7 questions of 3 marks each:**

31.	Explain the psychrometric process which can be used for summer Air-conditioning with the help of psychrometric chart.	(3)
32.	What is a Duct? Explain loop perimeter duct layout system with a neat sketch.	(3)
33.	What is a Refrigerant? Explain the properties of Ammonia (NH <sub>3</sub> ) as refrigerant.	(3)

34.	Explain different methods which are used for defrosting in a cold storage.	(3)
35.	Explain current type starting relay with a neat sketch. Where it is commonly used.	(3)
36.	Write a short note on cold-storage.	(3)
37.	How the leaks of halocarbon refrigerants detected explain.	(3)

**Answer any 3 questions out of the given 5 questions of 5 marks each:**

38.	What is an insulating material? Explain the properties of insulating materials.	(5)
39.	Write the names of different refrigerant control devices. Give advantages and disadvantages of capillary as an expansion device as compared to an expansion valve.	(5)
40.	Where and why a high pressure cutout is used? Explain the working of a H.P. cutout with a neat sketch.	(5)
41.	What are the different commercial applications of refrigeration? Draw a layout of an Ice-plant.	(5)
42.	What is an Air-conditioning system? Give classification of Air-conditioning systems.	(5)