

Birla Industrial & Technological Museum
(A unit of National Council of Science Museums)
19A, Gurusaday Road, Kolkata – 700 019

Written Test for recruitment of Technician 'A' (Refrigeration & Air-conditioning) at BITM, Kolkata

Date: 19.04.2023

Marks: 30

Time: 1 hour

Roll No: _____

Signature: _____

General Instructions:

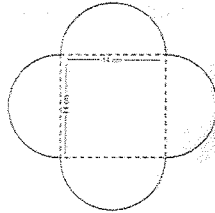
1. All questions are compulsory.
2. Give the answers in your question paper only.
3. Smart phone/smart watch are to be put on switched off mode in the examination hall.
4. No calculator is allowed.
5. There is no negative marking.

Part – 'A'

(5 x 1) = 5

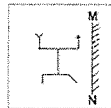
Tick(✓) the correct answer in the box provided

- 01) Each arm of the inside dotted square is 14 cm long. Find out the perimeter of the given shape:



- | | | |
|------|-------------------|-----|
| i. | 66 cm | [] |
| ii. | 88 cm | [] |
| iii. | 99 cm | [] |
| iv. | None of the above | [] |

- 02) If a mirror is placed on the line MN, then which of the figures will be the right image of the given figure.

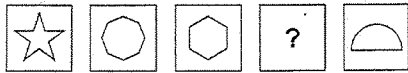


- | | | |
|------|--|-----|
| i. | | [] |
| ii. | | [] |
| iii. | | [] |
| iv. | | [] |

03) Hospital is 12 km towards east of Rupam's house. His school is 5 km towards south of hospital. What is the shortest distance between Rupam's house and his school?

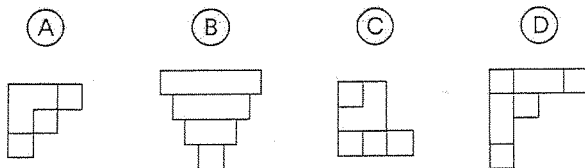
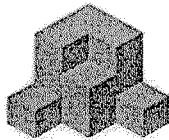
- i. 12 km []
- ii. 13 km []
- iii. 17 Km []
- iv. 16 Km []

04) Which image would come in the blank space in the following sequence?



- i. []
- ii. []
- iii. []
- iv. []

05) What would be the look of the 3D shape as shown here if we see it from the top?



- i. Like A []
- ii. Like B []
- iii. Like C []
- iv. Like D []

Part – 'B'

(10 X 1) = 10

Tick(✓) the correct answer in the box provided

01) In a split AC, the indoor unit comprises of

- i. Evaporator coil & Blower []
- ii. Evaporator coil, Blower and capillary tube []
- iii. Evaporator coil, Blower & Motor, air filter, control panel, supply and return air grills []
- iv. Evaporator coil, Blower, air filter, control panel, supply & return air grills and capillary tube []

02) Hissing or gurgling noise is produced from the exit of :

- i. Evaporator []
- ii. Compressor []
- iii. Capillary tube []
- iv. Condenser []







- 03) Name the refrigerant which is being used widely in inverter type VRV/VRF Air conditioning system :
- i. R-22 []
 - ii. R-410A []
 - iii. R-134A []
 - iv. R-12 []
- 04) Which of the following statements is wrong?
- i. A refrigerant should have low specific heat []
 - ii. A refrigerant should have high boiling point []
 - iii. A refrigerant should have high latent heat of vaporization []
 - iv. A refrigerant should have higher critical temperature []
- 05) In a refrigeration system, the expansion device is connected between the
- i. Compressor and condenser []
 - ii. Condenser and receiver []
 - iii. Receiver and evaporator []
 - iv. Evaporator and compressor []
- 06) One Ton of Refrigeration is equal to the refrigeration effect corresponding to melting of 1000 Kg of ice
- v. In 1 minute []
 - vi. In one hour []
 - vii. In 24 hours []
 - viii. In 12 hours []
 - ix. []
- 07) Which of the following parameters indicates comfort conditions in Air conditioning system?
- i. 25°C DBT & 100% RH []
 - ii. 22°C DBT & 60% RH []
 - iii. 20°C DBT & 75% RH []
 - iv. 25°C DBT & 80% RH []
- 08) The effectiveness of a cooling tower depends upon
- i. Dry bulb temperature of air []
 - ii. Wet bulb temperature of air []
 - iii. Direction of flow of air []
 - iv. None of the above []
- 09) The Coefficient of Performance (COP) of a domestic refrigerator
- i. Is less than 1 []
 - ii. Is more than 1 []
 - iii. Is equal to 1 []
 - iv. Depends upon the weather conditions. []
- 10) Sling psychrometer is used to measure:
- i. Only dry bulb temperature []
 - ii. Only wet bulb temperature []
 - iii. Relative humidity []
 - iv. All of the above []

Part – ‘C’

(6 X 1) = 6

11) Identify the symbols and write their names from the list given below:

- (a) Vacuum Pump (b) Return Grill (c) Reciprocating Pump
 (d) Pipe coil (e) Condenser (f) Reciprocating Pump

Give the answer of the following :

(2 X 1) = 2

12)	Which instrument is used to measure the rate of flow of air in an air-conditioning system? - Ans:
13)	Which instrument is used to measure the humidity of air? Ans:

Part – ‘D’

(5 X 1) = 5

14) Write the full from of the following:

i)	HVAC:
ii)	VRF:
iii)	VFD:
iv)	EER:
v)	FCU:

15. An ice plant is used for making ice at 0°C from water available at 30°C . The temperature of brine is -10°C . Find out the Co-efficient of performance of the system. Take latent heat of ice as 80°K .

Ans:

