S. B. Roll. No.....

REFRIGERATION AND AIR CONDITIONING
5th Exam/Mech./6853/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. What is Wet bulb temperature?
b. Define Psychrometry.
c. Define Refrigeration effect.
d. What is standard unit of refrigeration?
e. What do you understand by ice making capacity of a Refrigerating machine?
f. Enlist four Fundamental operation of a simple Vapour compression system.
g. Subcooling increases _____
h. Vapor absorption system uses _____energy to produce refrigeration.
i. Name various methods used for leak detection of refrigeration.
j. Define Refrigerant.
k. Inverter compressor is a _____speed compressor.
l. The air having same DBT, WBT and DEW Point temperature is known as_____.
m. Define relative humidity.
n. Define bypass factor.
o. Define latent heat of refrigeration.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. Compare Refrigerant R-12 with R-134-A
ii. Give the use of capillary tube.
iii. Explain the working of vapor compression system by drawing a flow diagram.
iv. Explain heating and humidification.
v. Define and Explain WBT, Humidity ratio and degree of saturation.
vi. Give the advantages of a vapor compression system over air refrigeration system.
vii. Write short notes on pressure-enthalpy chart, Show the simple vapour compression cycle on p-h chart.
viii. What do you understand by star rating of Air conditioners?
ix. Enumerate the desirable properties of an ideal refrigerant.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Explain the working of Lithium bromide Vapor absorption refrigeration system.
b. Draw DBT lines, humidity ratio lines, WBT lines, DPT lines, relative humidity lines on psychometric chart and explain sensible heating and sensible cooling.
c. What are the types of condensers used in refrigeration systems? With a neat sketch, explain working of evaporative condenser.
d. Explain the working of a Bell-Coleman refrigeration with cycle.
e. A refrigeration system operates on the reversed Carnot cycle between temperature limits of 25^0C and -10^0C, determine its COP, when working as (a) refrigerating machine (b) heat pump (c) heat engine.