Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech. Summer 2017 - 18 Examination

Semester: 2 **Date: 21/05/2018**

Subject Code: 03210152 **Time: 02:00PM to 04:30PM**

Subject Name: Advanced Refrigeration & Air Conditioning **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.
5. If any chart or graph uses to solve any question, attach compulsory with answer book.

Q.1 A) Write a short note on automatic expansion valve. **(05)**

B) Describe the properties of ideal refrigerant. **(05)**

C) Explain Factors Affecting Human Comfort. **(05)**

Q.2 Answer the following questions. **(Attempt any three) (Each five mark)** **(15)**

A) Explain classification of compressor.

B) Write difference between absorption and adsorption refrigeration

C) Write a short note on “Cold storage”.

D) Explain the terms RSHF, GSHF, SHF, ESHF and bypass factor.

Q.3 A) Sketch and explain cascade refrigeration system with T-s and p-h diagram. **(07)**

B) What is clean room condition? What are its typical applications? **(08)**

OR

B) The barometer for air reads 760 mm of Hg. The DBT and WBT measured using sling psychrometer is 25°C and 20°C respectively. Calculate (1) Vapour pressure (2) Relative humidity (3) Humidity ratio (4) Dew point temperature (5) Specific enthalpy (6) Wet bulb depression and (7) Dew point depression. **(08)**

Q.4 A) Discuss various methods of food preservation. **(07)**

OR

A) Explain methods for determination of duct size in brief. **(07)**

B) Explain Li-Br VARS in details with neat sketch. **(08)**