

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Winter 2017 - 18 Examination

Semester: 2**Subject Code: 03210152****Subject Name: Advanced Refrigeration & Air Conditioning****Date: 09/01/2018****Times: 2.00 pm to 4.30 pm****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. Use Refrigerant and Psychrometry charts/tables where required.**

- Q.1** A) Explain the terms RSHF, GSHF, ESHF, contact factor and bypass factor. (05)
B) Explain static regain methods for duct design. (05)
C) Describe the properties of ideal refrigerant. (05)
- Q.2** Answer the following questions. (Attempt any three) (Each five mark) (15)
A) Explain briefly the procedure for estimating heating loads.
B) Write a short note on automatic expansion valve.
C) Explain Factors Affecting Human Comfort.
D) Describe an Air Handling Unit (AHU) & Discuss the need of transmission aspects of air in air conditioning.
- Q.3** A) Draw a neat diagram of Lithium Bromide water absorption system and explain its working. List the major field of application of this system. (07)
B) State & discuss the air distribution device with neat sketch. (08)
- OR**
- B) Explain clean rooms in detail & write Sources of Contamination. (08)
- Q.4** A) Sketch and explain cascade refrigeration system with T-s and p-h diagram. (07)
- OR**
- A) Discuss the working principle of air-water systems with suitable diagram & state its applications. (07)
B) Discuss limitations of single stage systems & explain need of multi stage vapour compression refrigeration system. (08)