Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

M.Tech., Winter 2017 - 18 Examination

Semester: 2 **Date: 11/01/2018**
Subject Code: 03210154 **Time: 2:00 pm to 4:30 pm**
Subject Name: Solar Engineering **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.

Q.1 **A) Define the following terms.** **(05)**

(1) Solar altitude angle

(2) Solar Zenith Angle

(3) Solar Azimuth angle

(4) Declination angle

(5) Latitude angle

B) Explain with neat sketch working Principal of absorption cooling system. **(05)**

C) Write a short note on solar operated Vapour Compression Refrigeration system. **(05)**

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

A) Explain with a neat sketch construction and working of Pyranometer.

B) Describe the main component of active solar space heating system.

C) Write the advantages and disadvantages of solar industrial process heat system.

D) Write a short note on sensible heat storage.

Q.3 A) Write comparison between active and passive solar heating system. **(07)**

B) Explain with a neat sketch solar space cooling system through ventilation. **(08)**

OR

B) Describe with neat sketch working of solar operated lithium bromide water Absorption system. **(08)**

Q.4 A) Explain with neat sketch hot air industrial process heat system. **(07)**

OR

A) Describe with neat sketch working of steam industrial process heat system. **(07)**

B) Explain Thermal energy storage in Phase change material. **(08)**