

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2181917

Date: 04/05/2017

Subject Name: Cryogenic Engineering(Department Elective II)

Time: 10:30 AM to 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain with neat sketch Joule-Thomson refrigeration system. 07
(b) Explain with neat sketch Gifford-McMahon refrigerator. 07
- Q.2** (a) Define superconductivity. What is Type-I and Type-II superconductors? Explain Meissner effect with sketch. 07
(b) Write short note on “Properties of liquid Hydrogen”. 07
- OR**
- (b) Write short note on “Properties of He 4”. 07
- Q.3** (a) List the types of insulations used in cryogenic equipments. Explain any one in brief. 07
(b) Explain with neat sketch cylindrical cryogenic fluid storage vessel. 07
- OR**
- Q.3** (a) Write short note on Multilayer Insulation. 07
(b) Explain with neat sketch the different types of cryogenic heat exchangers. 07
- Q.4** (a) Explain Principle of rectification with neat sketch. 07
(b) Write short note on Magnetic cooling. 07
- OR**
- Q.4** (a) List the temperature measuring instruments used in cryogenic applications. Explain any one in brief. 07
(b) Explain Orifice meter to measure flow rate of cryogenic fluids. 07
- Q.5** (a) List the Liquid level measuring gauges. Explain Hydrostatic gauges. 07
(b) Write short note on “Safety against cryogen hazard”. 07
- OR**
- Q.5** (a) Write short note on “Space simulation chamber”. 07
(b) Explain in brief “Applications of cryogenics in biology and medicine”. 07
