

Roll No

CM-801(B) (GS)
B.E. VIII Semester Examination, June 2020
Grading System (GS)
Cryogenic Engineering
(Elective - III)
Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. Discuss the various properties of the following cryogenic fluids:
 - i) Oxygen
 - ii) Argon
 - iii) Helium
2. Write short notes on the following :
 - a) Expanders
 - b) Gas purification
 - c) Insulation principles
 - d) Storage vessels
3. What is Cryogenics. State the limitations of vapour compression refrigeration system for production of low temperature.
4. Discuss the mechanical properties of materials at cryogenic temperatures.
5.
 - a) Compare the advantages and disadvantages of different types of insulations used in cryogenic system.
 - b) What are the system adopted to transfer the cryogenic fluid? Explain any two.
6. Consider a Linde-Hampson cycle with Nitrogen as working fluid. The system is operated between 1.013 bar (1 atm) and 101.3 bar (100 atm) at 300 K. Determine
 - i) Liquid yield
 - ii) Work per unit mass compressed.
7. Discuss in detail about the safety features used in cryogenic systems?

OR

Describe in detail the cleaning procedure adopted for cleaning of Hydrogen and Oxygen Equipments?
8. Write short notes on any two
 - a) Cryo coolers
 - b) Safety in liquid nitrogen system
 - c) Handling of high pressure cylinders
