

C 80613

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**EIGHTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME]
DEGREE EXAMINATION, APRIL 2015**

ME/PTME 09 803 L12/AM 09 804 L11 – CRYOGENIC ENGINEERING

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. What is cryogenic temperature ?
2. What is cryogen ?
3. What is gas liquefaction ?
4. What is refrigeration ?
5. Write a note on vacuum pump.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Explain about cryogenic systems.
7. Explain food preservation using cryogen.
8. Explain how a cascade system can be used to produce liquid nitrogen.
9. Write short notes on general liquefaction system.
10. What is cryogenic refrigeration system? Explain.
11. Explain the working of diffusion pump.

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. (a) Discuss electric and magnetic properties of materials at cryogenic temperature.

Or

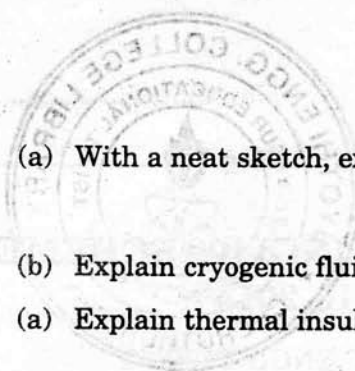
- (b) Explain about cryogenic fluids and their properties.

13. (a) Explain Linde-Hampson cycle in detail.

Or

- (b) Explain Stirling cycle and cryo coolers.

Turn over



14. (a) With a neat sketch, explain the magnetic refrigeration system.

Or

(b) Explain cryogenic fluid storage and transfer systems.

15. (a) Explain thermal insulation and their performance at cryogenic temperature.

Or

(b) Explain about cryo pump and cryo pumping applications

(4 × 10 = 40 marks)