

GANPAT UNIVERSITY

B. Tech. Semester: VI Marine Engineering

Regular Examination April – June 2015

2MR601 Refrigeration & Air Conditioning

Time: 3 Hours

Total Marks: 70

- Instruction:** (1) Attempt all Questions.
 (2) Assume suitable data if necessary.
 (3) Figure to the right indicates full Marks.
 (4) Start new Question on New Page.1

Section – I

- Que. – 1 (a) Describe psychometric chart. [5]
 (b) Explain thermostatic expansion valve with neat sketch. [7]

OR

- Que. – 1 Comparison between VAR and VCR system. [12]
 Que. – 2 (a) Define following term related to psychrometry [6]
 (i) Wet bulb temperature (ii) dry bulb temperature
 (iii) Relative humidity (iv) Specific humidity (v) dew point temperature
 (b) Derive equation of COP for Bell-Coleman Air-refrigerator show [5]
 Different processes on P-V and T-S Diagram

OR

- Que. – 2 With neat sketch explain construction and working of VCR system [11]
 Que. – 3 With neat sketch explain construction and working of VAR system [12]

Section – II

- Que. – 4 (a) Describe in brief properties of commonly used refrigerants [6]
 (b) Describe eco friendly refrigerant [6]

OR

- Que. – 4 Draw Diagram of typical Refrigeration circuit used in Marine Application [12]
 and describe all components in brief.
 Que. – 5 (a) Enlist safety precautions while working on Refrigeration Equipments [6]
 (b) What properties shall a refrigerant have in order for it to be used [5]
 in Marine Industry?

OR

- Que. – 5 Describe with a diagram the use of Secondary Refrigerant and give reasons [11]
 as to why Secondary refrigerants are used in Marine Industry.
 Que. – 6 With the help of diagram explain single Duct Air conditioning system. [12]

END OF PAPER