

GANPAT UNIVERSITY

B. Tech. Semester: III (Marine) Engineering

Regular Examination November – December 2014

2MR304 Applied thermodynamics-1

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.

Section - I

- Que. – 1 (a) Describe the Dalton's law of additive pressure 6
 (b) What is the meaning of compound steam engine? 6
 OR
 Que. – 1 (a) Find out the efficiency of Carnot cycle? 6
 (b) Explain the property of ideal gases? 6
 Que. – 2 (a) Explain the thermodynamic or absolute temperature scale? 6
 (b) Difference between the heat pump and heat engine? 5
 OR
 Que. – 2 (a) Different statement of second law of thermodynamics? 5
 (b) Give the difference between the actual indicator diagram and theoretical 6
 Que. – 3 (a) Explain the Regenerative cycle steam power plant? Find the efficiency cycle with Use of P-v, T-s and H-s diagram? 12

Section – II

- Que. – 4 (a) Advantages of compound steam engine. 6
 (b) A steam engine has a stroke equal to 1.3 times the diameter and a Dry and saturated stem is supplied at 10 bar and exhausts at 1.05 bar. if rpm and ratio of expansion 2.5, indicated power 185 kw, calculate the Cylinder. 6
 OR
 Que. – 4 (a) Define the efficiency of reheat cycle. 7
 (b) Find the indicated power in double acting steam engine. 5
 Que. – 5 (a) List down classification of compressors & explain each in detail. 11
 OR
 Que. – 5 (a) Explain single stage & multi stage compressor 6
 (b) What is the effect of clearance and volumetric Efficiency in Single stage 5
 Que. – 6 (a) Define following. 12
 i) Air and Water vapour mixture, ii) Specific Humidity,
 iii) Relative Humidity iv) Dew point temperature
 v) Unsaturated and saturated Air vi) Psychometric chart.