

INDIAN MARITIME UNIVERSITY
(A Central University, Govt.of India)

May/June 2015 End Semester Examinations

SEMESTER – IV, B.TECH (MARINE ENGINEERING)

PRACTICAL MARINE AUTOMATION (T 2407 / T 1407)

Date:25.06.2015
Time:-3 Hrs

Max.Marks:100
Pass Marks:50

PART – A
(Compulsory Questions)

(3 x10 = 30 Marks)

1. a) Define On-Off control system.
- b) Explain P-Band.
- c) Explain Burdon Tube.
- d) What is negative feedback?
- e) What is RTD (resistance temperature detector)?
- f) What is turndown ratio?
- g) Define Force Balance Mechanism.
- h) How do Synchros work?
- i) Write a short note on Thermistor.
- j) What is Liquid Glass Thermometer?

PART – B
(Answer any five of the following)

(5 x14 = 70 Marks)

2. a) Explain Open Loop and Closed Loop control system with their advantages and disadvantages. (6)
- b) Describe with sketch Cascade Control system used in marine system. (8)

3. a) Explain PID Control system and characteristics. (6)
b) Describe with sketch Main Engine Fuel Oil Viscosity Controller. (8)
4. a) Explain the working principle of Pneumatic Relay with neat sketch. (7)
b) How Variable Inductance Transducer works? (7)
5. a) Explain with sketch Pneumatic Diaphragm Actuator with Positioner? (7)
b) Describe Electro Hydraulic Actuator. (7)
6. a) Why Single, Two and Three Elements system are used in Boiler Water Level Controller? (6)
b) Describe with sketch Boiler Two Element Water Level Controller. (8)
7. a) Explain Square Root Extractor? (8)
b) How Drag Cup Tachometer works. (6)
8. a) With sketch describe principle and operation of Oil Mist Detector in M/E Crank Case. (7)
b) Explain with sketch Dionic Gauge (Salinometer). (7)
9. a) What is Automatic Control System? (4)
b) What are the mandatory requirements of Automatic Control System for UMS Vessel, explain it? (10)
