

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

B.Tech. (Marine Engineering) - Semester IV
December 2015 End Semester Examinations

Practical Marine Automation
Subject Code: UG11T2407/UG11T1407

Time: 3 hrs

Date: 30.12.2015

Max Marks: 100

Pass Marks: 50

PART-A

(10x3=30 Marks)

Compulsory Questions

1. (a) Define “Off-set”.
- (b) How “Bubbler Gauge” works in level measurement?
- (c) What do you mean by “Recovery Time”?
- (d) How Thermocouple works?
- (e) Explain “Burdon Tube Gauge”.
- (f) What is “Modulating Control”.
- (g) Define “Single Element Control” in a boiler control system.
- (h) What is Calibration of an instrument?
- (i) What is Derivative Control?
- (j) Define “Moment Balance Mechanism”.

PART- B

(5 X 14 = 70 Marks)

Answer any five from the following:

2. (a) What is Automatic Control System? (4)
- (b) What are the basic elements of a control system and how they function? (10)
3. (a) Explain Nozzle Flapper function in a control system. (6)
- (b) Describe pneumatic Proportional and Integral (P+I) control system. (8)
4. (a) What is pneumatic Relay, how it works? (6)
- (b) Sketch and describe Stack Type Pneumatic Transmitter. (8)
5. (a) What do you mean by Split Range Control system. (4)
- (b) Explain ME Jacket Cooling Water Temperature Control system with split range control. (10)
6. (a) What are the Alarms Trips of a Boiler ? (4)
- (b) Describe Boiler Automatic Fuel/Air Ratio Control system. (10)
7. (a) How Electrical Tachometer works? (6)
- (b) Explain with sketch Electro Pneumatic Transmitter. (8)
8. (a) Explain with suitable sketch Main Engine Lubricating Oil Temperature Control system. (7)
- (b) Explain Capacitive Pressure Sensors. (7)
9. (a) Explain Photo conductive cells and Photo Voltaic cell. (6)
- (b) With sketch describe Oil in Water Monitor. (8)
