

INDIAN MARITIME UNIVERSITY
DEPARTMENT OF MARINE ENGINEERING
TERM - END EXAMINATION - JUN / JUL 2011

Code: UG/ME/BS/T/227
Name: PRACTICAL MARINE AUTOMATION
Semester: IV

Time: 0300 Hrs
Max. Marks: 100
Pass Marks: 50

Part A (3 × 10 = 30 Marks)
Answer all the Questions

1. (a) Define On - Off control.
- (b) What do you mean by system response?
- (c) What is called pneumatics?
- (d) Define Offset.
- (e) How do you classify the actuators by the operating medium employed?
- (f) Draw the valve operating characteristic curve.
- (g) What is the application of thermistor?
- (h) Define Process Control?
- (i) What is called synchros?
- (j) What is the importance of fuel - oil viscosity?

Part B (14 × 5 = 70 Marks)
Answer any five from the following

2. (a) What do you understand by Automatic Control System? (7)
- (b) What are its advantages and disadvantages? (7)
3. (a) Write a short note on controller adjustment? (7)
- (b) With the help of neat sketch explain the working principle of differential relay. (7)
4. (a) What is a transducer or converter as used in Automatic Control System? (6)
- (b) Show and explain Electro - Pneumatic Converter (IP Converter). (8)
5. (a) Explain how Gauge Glass is used to measure the level of the tank, with neat sketch. (7)
- (b) Write a short note on Drag cup tachometer. (7)

6. (a) Explain the working principle of nozzle - flapper arrangement, with neat sketch. (7)
 (b) Write a short note on linear variable differential transformer. (7)
7. (a) Explain with suitable sketch Oil Monitoring System for Bilge. (10)
 (b) Draw the control circuit diagram of cooling water temperature control. (4)
8. (a) Explain with suitable sketch Main Engine Fuel Oil Viscosity Control. (6)
 (b) What Alarms and Trips are in Automatic Combustion Control System? of boiler (8)

blr HP - A
 H HP - T
 C-P - T

blr air temp high - T
 " flame fail - T
 smk duct - A
 at ship low - A
 high - A