

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)
End Semester Examinations- June-July 2019
Semester – IV
B.Tech (Marine Engineering)
Practical Marine Automation
(UG11T1407 / UG11T2407)

Date: 08-07-2019

Maximum Marks: 100

Time: 3 Hrs

Pass Marks: 50

Part - A

All questions are compulsory

(10 x 3 = 30 Marks)

1. (a) Define Hysteresis and Proportional Band
- (b) Define Error and Offset
- (c) What are the performance requirements of a control system?
- (d) What is On-Off Control?
- (e) Compare Servo Control systems and Regulatory Control systems
- (f) What are the standard signal levels for Electrical and Pneumatic transmitters?
- (g) What the various sensors used for flow measurement?
- (h) What are the photo-electric effects?
- (i) What is Spilt Range Control?
- (j) What do you mean by tuning of a Controller?

Part - B

Answer any 5 questions (5 x 14 = 70 Marks)

2. (a) Compare Open loop and Closed loop systems. (7)
- (b) Compare Pneumatic and Electrical signal transmission (7)
3. (a) Explain Cascade control with a diagram (7)

- (b) What is Distance Velocity Lag? Explain with an example. (7)
4. (a) Explain Bourden Tube Gauge with a neat diagram (7)
(b) Explain Variable Inductance Transducer. (7)
5. (a) Explain Pneumatic Actuators (7)
(b) Explain Valve Positioner and its benefits (7)
6. (a) Explain Nozzle Flapper as a transducer (7)
(b) Explain pneumatic PID controller using Nozzle Flapper (7)
7. (a) Explain working of a Synchro. (7)
(b) What are the essential requirements of UMS operation? (7)
8. (a) Explain Piston/Jacket cooling system. (7)
(b) What is an electrical Servo Motor? (7)
