

INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

MAY/JUNE 2018-END SEMESTER EXAMINATION

B.Tech (Marine Engineering)

Semester: IV

Practical Marine Automation -(UG11T1407/UG11T2407)

Date: 22-06-2018

Time: **3 Hrs**

Maximum Marks:100

Pass Marks: 50

Part A (10 × 3 = 30 Marks)

All Questions are compulsory

1. (a) What is called closed loop control system?
- (b) Define set value.
- (c) Define cascade control.
- (d) What is called error signal?
- (e) Why integral controller is called reset controller?
- (f) What is the principle of venturimeter?
- (g) Define calibration.
- (h) Define photoelectric effect. What is called photoelectric cell?
- (i) What is called transducer?
- (j) Pneumatic actuators are preferred on onboard ships. Justify

Part B (5 × 14 = 70 Marks)

Answer any five of the following

2. (a) Describe split range control system with suitable diagram. (7)
- (b) Discuss distance velocity lag and transfer lag. (7)
3. (a) Describe Pneumatic Proportional Plus Derivative controller with suitable diagram. (7)
- (b) What is called controller adjustment? Why it is necessary? How it is done? (7)
4. (a) Explain the working principle of piston actuator with suitable diagram. (7)
- (b) Discuss hydraulic ram unit with suitable diagram. (7)

5. (a) Explain Drag Cup Tachometer with neat sketch. (7)
- (b) Sketch and explain the principle of viscometer. (7)
6. (a) What is called salinity indicator? Where it is used onboard?
Explain the principle of salinity indicator. (7)
- (b) Draw oil content monitoring system. What is the requirement
of oil content monitoring system onboard? (7)
7. (a) Discuss flopper nozzle system with suitable diagram. (7)
- (b) Explain I – P converter with neat sketch. (7)
8. (a) Discuss lubricating oil temperature control with suitable diagram. (7)
- (b) Draw fuel oil viscosity control system. How fuel oil viscosity
control is achieved? (7)
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