

INDIAN MARITIME UNIVERSITY
(Central University, Government of India)

May/June 2016 End Semester Examinations
B.Tech. (Marine Engineering)

Fourth Semester – Practical Marine Automation (UG11 T1407/T 2407)

Date : 22.06.2016

Max. Marks: 100

Time: 3 Hrs

Part-A

(3 x 10 = 30 Marks)

Compulsory Question

- 1) a) What is Derivative Control, why it is called Rate Action Control?
- b) Explain Stack Type Pneumatic Controller?
- c) Explain the working principle of flopper nozzle system.
- d) What is RTD? Explain its application?
- e) What is Modulating Control?
- f) What do you mean by Turn Down Ratio?
- g) What do you understand by the term 'Proportional band'?
- h) What is called photovoltaic cell?
- i) What do you mean by transducer?
- j) What are the advantages and disadvantages of Electric Actuators?

Part-B

(14 x 5 =70 Marks)

Answer any Five Questions

- 2) (a) What is automatic Control System, How it function. (6)
- (b) Explain Pneumatic Proportional+ Reset action with its characteristics. (8)
- 3) (a) Draw the neat diagram and explain the diaphragm actuator with positioner. (7)
- (b) Explain Electro pneumatic controller (IP converter). (7)
- 4) (a) Discuss fuel oil viscosity control of ME by Viscotherm Sensor with the help of diagram.(8)
- (b) Explain Moment Balance System of a Pneumatic Controller. (6)
- 5) (a) Explain Square Root Extractor. (7)
- (b) Describe with sketch the working function of Salinity Indicator used on board. (7)
- 6) (a) What is Ratio Control? (6)
- (b) Explain Marine Boiler Automatic Combustion Control system. (8)
- 7) (a) Explain difference between Split Range Control System and Cascade Control System? (6)
- (b) Explain an example of Cascade Control System use in Ship. (8)
- 8) (a) Discuss the requirements of an UMS operation of a motor ship? (10)
- (b)What is Electrical Servomotor. (4)
