Eighth Semester B.E. Degree Examination, June/July 2016
Marine Automation

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Mention and explain any five characteristics of transducers.   **(10 Marks)**
   b. With a neat sketch explain the working of hall effect sensor.   **(10 Marks)**

2 a. With a neat diagram explain photoelectric cell photo conductive cell and photovoltaic cell.
                                                                              (12 Marks)
   b. With a neat sketch explain the working of viscosity sensor.   **(08 Marks)**

3 a. With a neat diagram explain the working of variable capacitance pressure transducer.
                                                                              (10 Marks)
   b. With a neat diagram explain bimetallic temperatures sensor.   **(10 Marks)**

4 a. Explain the working current to voltage and voltage to current converters. **(08 Marks)**
       Name the different type of filters and explain any two them.   **(12 Marks)**
   b.

PART – B

5 a. With an example and a neat block diagram explain open loop and closed loop control system.
   b.   **(12 Marks)**
       Explain the P + I + D (proportional, Integral and derivative) controller with system response graph.   **(08 Marks)**

6 a. What are logic blocks? Explain AND, OR and NOT functions.   **(08 Marks)**
   b. With a neat diagram explain how a control valve operates with the signal from P + I + D controller.   **(12 Marks)**

7 a. Write a short note on piston actuators.   **(08 Marks)**
   b. With a neat sketch explain diaphragm actuators and mention any four points where positioners are necessary.   **(12 Marks)**

8 a. With a neat diagram explain the fuel oil viscosity control.   **(12 Marks)**
   b. Explain the working of a feed water control of boiler.   **(08 Marks)**

* * * * *