

# ***B. Tech Degree VIII Semester Examination in Marine Engineering June 2012***

## **MRE 805 FLUID CIRCUITS AND CONTROL**

Time : 3 Hours

Maximum Marks : 100

- I. (a) Explain the different types of valves? Describe with the aid of suitable diagrams. (18)  
 (b) Explain the Reservoir, with its symbolic representations. (7)

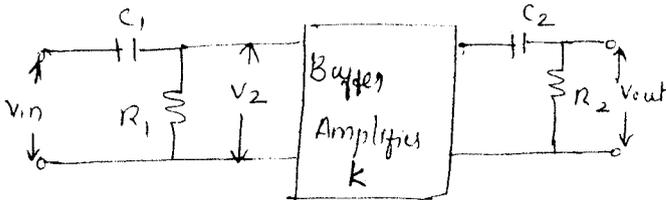
**OR**

- II. Write a short note on: (5 x 5 = 25)
- (i) Pipe couplings
  - (ii) Actuators
  - (iii) Piping and fittings
  - (iv) Sealing and packing
  - (v) Thermostat

- III. (a) Explain Hydraulic Reservoir and its properties. (13)  
 (b) Explain Compressibility and Inertia loading. (12)

**OR**

- IV. (a) Differentiate between Hydraulic and pneumatic systems. (13)  
 (b) Explain the properties of fluids. (12)
- V. (a) Explain the classification of pumps with the help of suitable diagrams. (15)  
 (b) Find the Transfer Function of the system shown below: (10)



**OR**

- VII. (a) Sketch the Root Locus for the unity feed back system, whose open loop Transfer function is  $G(s) = \frac{k}{s(s+2)(s^2+2s+5)}$  (15)
- (b) Write a note on: (10)
- (i) Hydraulic Lift
  - (ii) Hydraulic Press

**OR**

- VIII. (a) What is Routh's criteria? Explain the role of Routh's to find out the stability of the system? The open loop T/F of a unity Feed back system is given by  $G(s) = \frac{k(s+1)}{s^3 + as^2 + 2s + 1}$ . Determine the value of 'k' and 'a', so that the system oscillates at a frequency of 2 rad/sec. (15)
- (b) Write a note on: (10)
- (i) Hydraulic Crane
  - (ii) Fluid Torque Converter