

Minoufia University
 Faculty of Electronic Engineering
 Industrial Electronics and Control Eng.
 Course: Control Systems Application-3
 Course Field: Specialization Requirements
 Academic Level: Fourth Year, 1st Semester
 Academic Year: 2018 / 2019
 Course Code: ACE 414



Final Term Exam
 Date: 20 / 1 / 2019
 Exam Type: Written
 No. of Exam Pages: 2
 No. of Exam Questions: 5
 Exam Marks: 60 Points
 Exam Time: 3 Hours

Answer the following questions:

Question-1:

[12 Points]

1. What happened when we applied + V_x on hydraulic valve?
2. What happened when we applied - V_x on hydraulic valve?
3. What is the relation between flow & V_x ?
4. What is the relation between flow & pressure valve?
5. Draw block diagram of velocity servo mechanism?
6. Stat the Basic Components of a Pneumatic System.






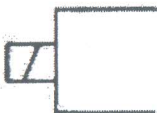

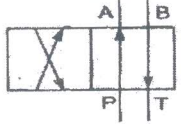
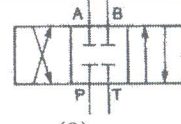
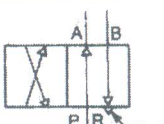
Question-2: Put True (√) or False (×) signs for the following expressions:

[10 Points]

1. The characteristic feature of stationary hydraulics is that valves are mainly solenoid operated.
2. The characteristic feature of mobile hydraulics is that the valves are frequently manually operated.
3. Fluid logic control: This type of system is controlled by hydraulic oil or air. The system employs fluid logic devices such as AND, NAND, OR, NOR, etc.
4. Electronic control: This type of system is controlling the fluid power systems by switches, relays, timers and solenoids.
5. Electrical control: This type of system is controlled by microelectronic devices. The electronic brain is used to control the fluid power muscles for doing work.
6. Hydrodynamic systems use fluid motion to transmit power. Power is transmitted by the kinetic energy of the fluid.
7. A hydrostatic system uses fluid pressure to transmit power. Hydrostatics deals with the mechanics of still fluids and uses the theory of equilibrium conditions in fluid.
8. Pneumatic and hydraulic systems require relief valves to direct and regulate the flow of fluid from compressor or pump to the various load devices.
9. Check valves only allow flow in one direction.
10. The simplest pressure regulating device is the control valve.

Question-3: stat the name of each Graphic symbols

[10 Points]

 (1)	 (2)	 (3)	 (4)	 (5)
 (6)	 (7)	 (8)	 (9)	 (10)

Question-4: Fill in the Blanks

[10 Points]

1. ----- is the desired amplitude of an output variable from a process.
2. ----- is the elapse time between the instant an error occurs and when the corrective action first occurs.

