

Final exam hydraulic

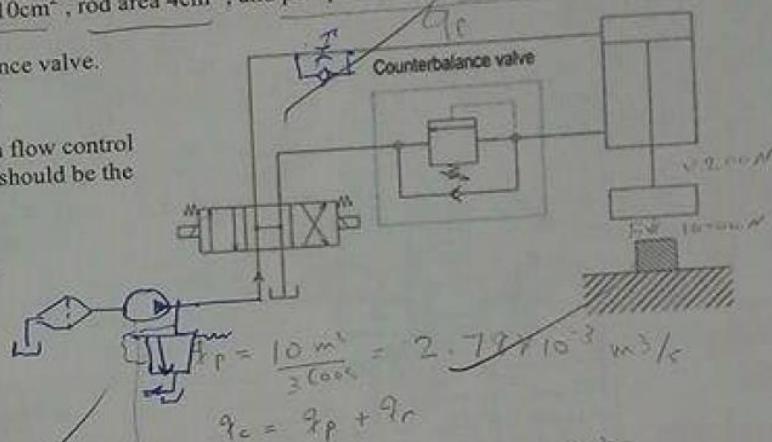
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Q1

Question Four (6pts)

4. Given the following Hydraulic Press circuit with the following information: piston weight 200N, molten needed force 10000N, piston area 10cm^2 , rod area 4cm^2 , and pump flow rate $10\text{m}^3/\text{hr}$. For the nearby, find
- ④ setting for the counter balance valve.
 - Continue the pump circuit
 - Piston speed
 - Adjust the circuit to have a flow control
 - Can you guess how much should be the PRV setting!



Q2

Truth table

Q3

<https://www.careerride.com/view/design-of-pneumatic-circuits-mcqs-with-answers-23980.aspx>

Q4

Problem-5 (5pts)

Given the pneumatic bus door opener as shown.

1. Name the missing DCV valve: 5/2 DCV

2. Compute the generated cylinder force:

$$\text{For retraction} \rightarrow F = P * (A - a)$$

$$\text{For extension} \rightarrow F = P * A$$

3. If one wants to create a delay of 2seconds then we should use delay operator

4. Give the name of the push button valve that is used: 3/2 DCV

5. If the compressor flow rate was $1 \text{ m}^3/\text{min}$, what would be the door angular speed: $V = \frac{Q}{A} \rightarrow 1 \text{ m}^3/\text{min}$

6. Name the cylinder used in the pneumatic circuit: Double acting cylinder

7. To make this circuit electro-pneumatic one needs to use a: ~~soft~~ solenoid DCVs

