X

Unit 11 - Week 10

Week 10: Assignment on flapper nozzle

1) *2 points*

For a flapper-nozzle system, if the flapper is tightly attached to the nozzle, then the outp pressure (P_o) of the nozzle back chamber can be expressed in terms of supply pressure (as-

- (a) Output Pressure = (Suppy Pressure)/2
- (b) Output Pressure = Suppy Pressure
- (c) Output Pressure = 2*(Suppy Pressure)
- (d) Zero

Accepted Answers:
(b) Output Pressure = Suppy Pressure

2) Typical supply pressure for the flapper-nozzle system is- *2 points*

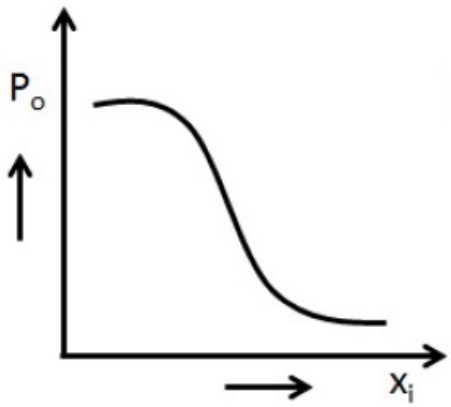
- (a) 15-30 Psi
- (b) 15-30 Ksc
- (c) 3-15 Ksc
- (d) 3-15 Psi

Accepted Answers:
(a) 15-30 Psi

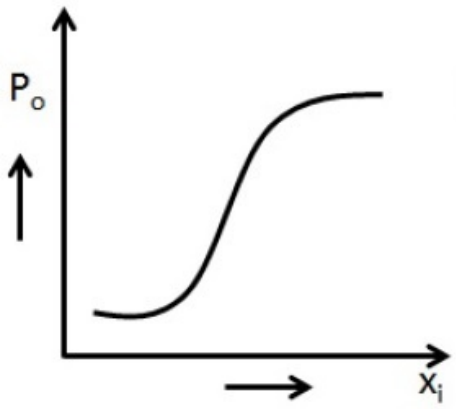
3) *2 points*

Transfer characteristic for the flapper nozzle (direct-acting) system can be best represente by- (P_o –output pressure of the system, x_i – distance between the flapper and nozzle)

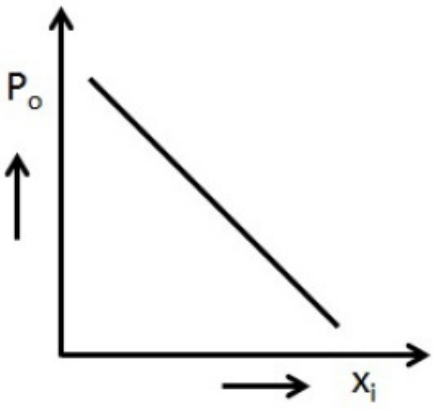
- (a)



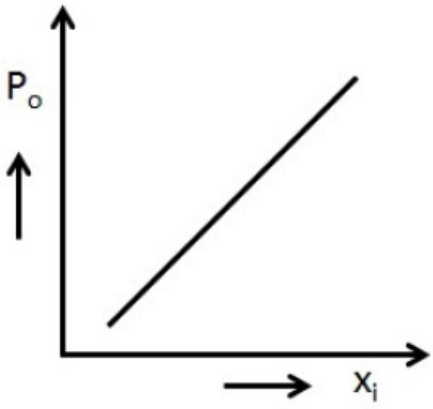
(b)



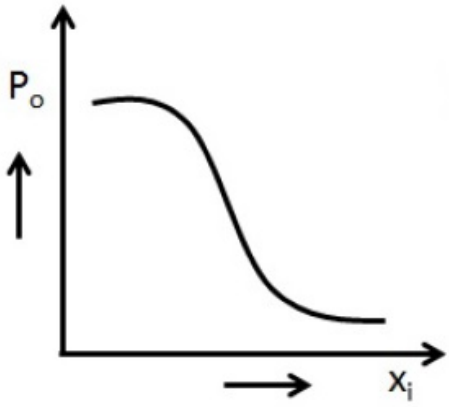
(c)



(d)



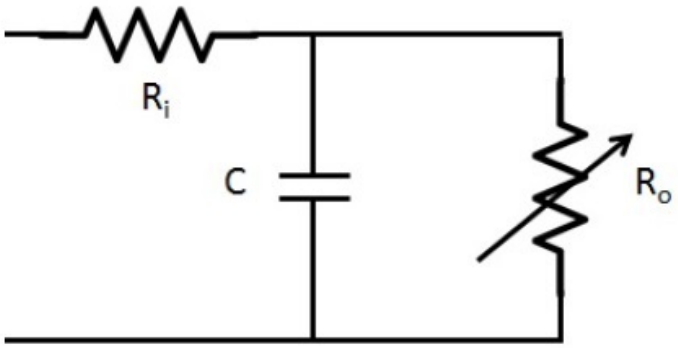
Accepted Answers:
(a)



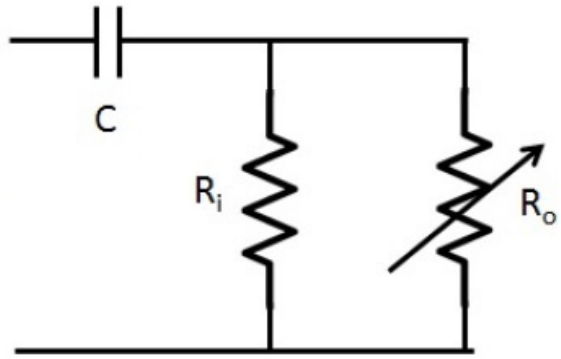
4) ***2 points***

Electrical equivalent of flapper-nozzle is- (R_i-Fixed restriction, C- Capacity i.e., volume of th system, R_o- variable restriction)

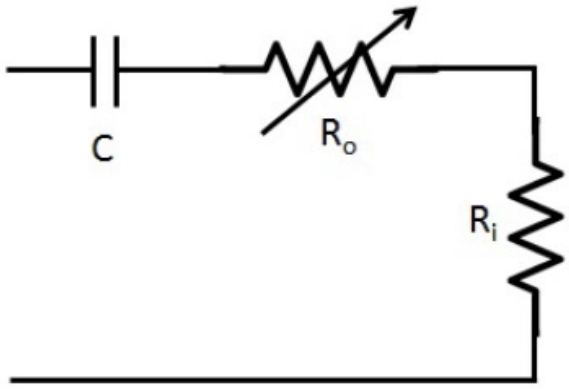
(a)



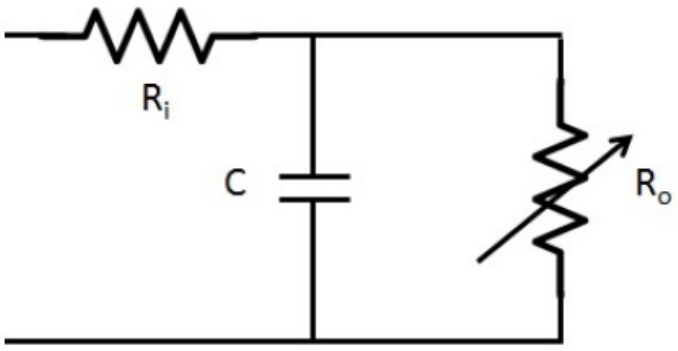
(b)



(c)



Accepted Answers:
(a)



5) ***2 points***

An I to P (current-to-pressure) converter (direct acting) based on a flapper-nozzle system converts standard current signal into an equivalent standard pressure signal. Determine tl conversion constants m and c. (hint: use the relation y= m*x+c, and find the constants m and c)

- (a) m = 0.75 Psi/mA, c = 0.75 Psi
- (b) m = 1.5 Psi/mA, c = 0.75 Psi
- (c) m = 0.75 Psi/mA, c = 0 Psi
- (d) m = 0 Psi/mA, c = 0.75 Psi

Accepted Answers:
(c) m = 0.75 Psi/mA, c = 0 Psi

Previous Page End