

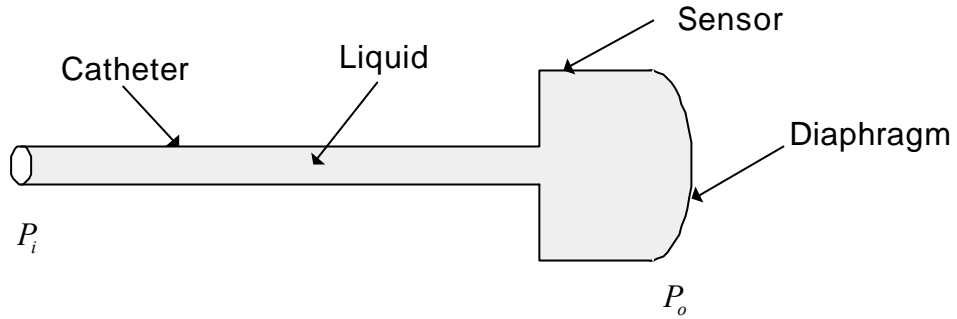
2000 2

20

1. 220V, 60Hz hot, neural, ground 3 ,
 chassis ground receptacle
 ground open , hot chassis 가
 가 .
- (a) 가 chassis , shock ?
- (b) , 200kΩ, 250Ω, 100Ω,
 250Ω , ?
- (c)

2. , 가 60bpm
 120mmHg, 80mmHg
 ,
 가 가 130mmHg
 , -2mmHg/s .
- (a) 가
- (b) , (a)
- (c) , ,

3.



- (a) RLC 가 , R, L, C 가
- (b) R, L, C (P), (F), (V)
- (c) P_i , v_i , P_o , v_o
- (d) Catheter 가 , 가 가?

4. Gage factor 가 +100 p-type Si strain gage 2 -100 n-type Si strain gage 2 . Cantilever p-type Si strain gage 2 n-type Si strain gage 2

- (a) 4 strain gage strain gage type dc 1V
- (b) Cantilever 가 , cantilever

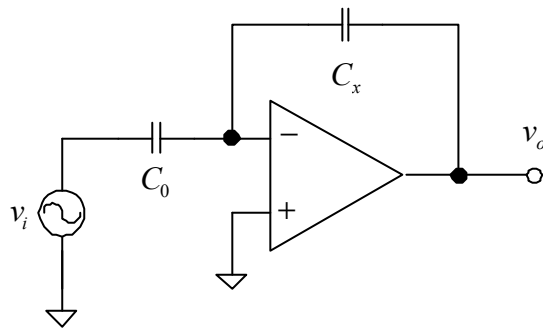
가 . 가 strain gage
 $\pm 0.05\%$, strain gage
 200Ω . 가 $\pm 5V$

(c) calibration

5. 1mm

$x(t) = 1 + 0.2\sin(2\pi ft)$ [mm] , f

$x(t)$ 5cm^2 $\epsilon_0 =$
 $8.8 \times 10^{-12} \text{F/m}$ 60bpm



(a) C_x x

(b) $v_i(t) = \sin(2\pi \times 10^4 t)$ V , $C_0 = 4.4\text{pF}$, $v_o(t)$

(c) $v_o(t)$ $x(t)$ phase-sensitive demodulator