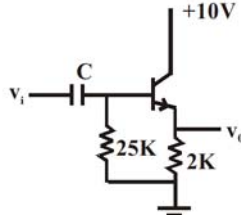


Electronics Devices And Circuits

Q 1.

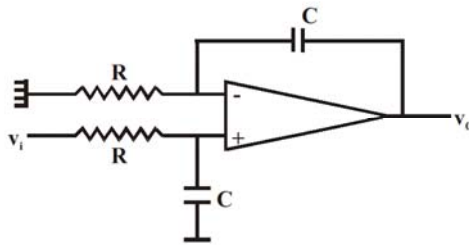
A BJT, Emitter follower is shown in Figure what is nature of feedback in this circuit.

- (a) Positive current
- (b) Negative current
- (c) Positive voltage
- (d) Negative voltage.



Q 2.

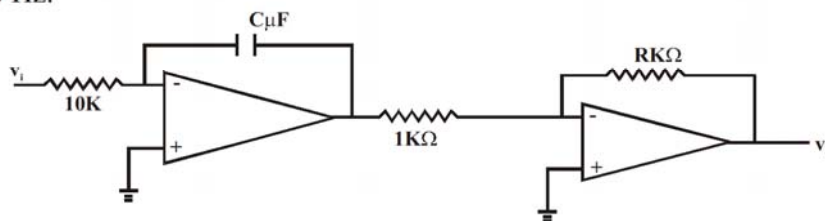
The circuit shown in figure below represents:



- Inverting integrator (b) Band pass filter (c) All pass filter (d) Non-inverting integrator

Q 3.

Assume that OPAMPS are ideal and have ± 12 volt supply. If input is a $\pm 5V$, 50 Hz square wave of duty cycle of 50%, the condition that triangular wave output has peak to peak amplitude of 5 volt and $\text{freq}^n = 50$ Hz.



- (a) $R/C = 1$ (b) $R/C = 2$ (c) $R/C = 5$ (d) $C/R = 5$

Q 4.

For an N-MOS If $K_n = 50 \mu\text{A}/\text{V}^2$, $V_T = 0.8$ volt $w/L = 10$ then what is value of drain current for $V_{GS} = 2$ volt and $V_{DS} = 1.0$ volt.

- (a) 1.8×10^{-4} Amp
- (b) 3.6×10^{-3} A
- (c) 1.8×10^{-3} A
- (d) 3.6×10^{-4} A

Q5.

If two FET's are connected in parallel and have $\mu_1 = 2$, $\mu_2 = 3$ and $r_{d1} = 2 \text{ k}\Omega$, $r_{d2} = 3 \text{ k}\Omega$ what is equivalent value of μ and r_d .


- (a) 2.4, 1.2 k Ω (b) 1.2, 5 k Ω (c) 5, 1.2 k Ω (d) 1, 5 k Ω

Q6.

Biassing is done to

1. Maintain Q, point in proper region. 2. To save power
 3. To improve stability 4. To reduce no. of resistors used.
 (a) 1, 2, 3 (b) 1, 3 (c) 1, 3, 4 (d) 1, 4

Q7.

Which statements are correct about Schmitt trigger  circuit?

1. It is a comparator circuit.
 2. It uses both positive and negative feedback.
 3. Output of Schmitt trigger is a square wave.
 (a) 1, 2 (b) 2, 3 (c) 1, 3 (d) 1, 2, 3

Q8.

3, amplifiers each of gain $A_0/2$ and producing a phase of 60° are connected in tandem. The feedback loop is closed, through a +ve gain of 0.008. What should be value of A_0 for system to be oscillatory.

- (a) +10 (b) -10 (c) +250 (d) +83.3