



**Rajiv Gandhi University of Knowledge Technologies**

**Week Test-6**

**Date:** 29.09.2012

**Subject:** IE

**Time:** 30 Min

**Course:** E2Sem1\_ECE, CSE

**Max Marks:** 10

---

1. The overall voltage gain of a common-emitter amplifier, with a non-ideal voltage source ..... as the internal resistance of the input voltage decreases.
  - (a) is unchanged
  - (b) increases
  - (c) decreases
  - (d) increases and then decreases
  
2. The common-emitter configuration is the best choice for amplification of small-signals, because it has
  - (a) a high voltage gain and high current gain
  - (b) A very high output resistance and very low input resistance
  - (c) Higher stability of operating point
  - (d) Emitter terminal is common for both input and output, leads to medium output resistance.

**3.** Adding an emitter-resistor to a common-emitter amplifier causes

- (a)** The voltage gain to increase, and the input resistance to decrease
- (b)** The stability of operating point to increase, input resistance to decrease, and voltage gain to increase
- (c)** The stability of operating point to increase, input resistance to increase, and voltage gain to decrease.
- (d)** The current gain to decrease, and voltage gain to increase

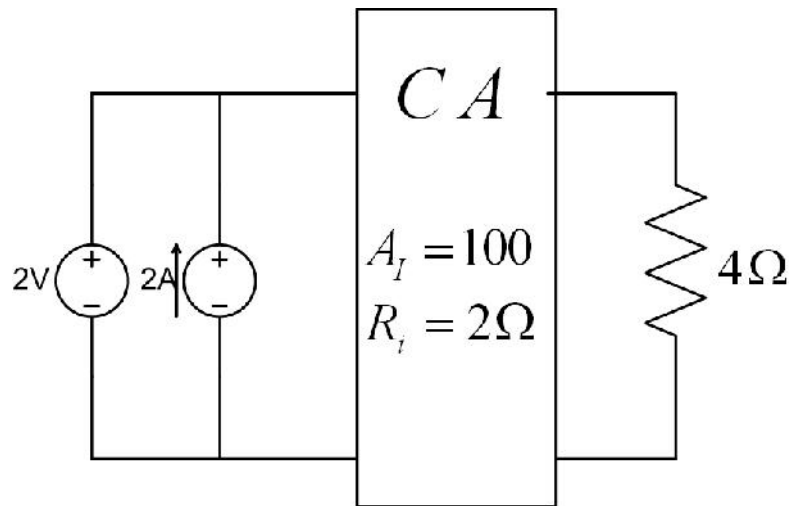
**4.** Coupling capacitors are used in amplifier circuits

- (a)** For impedance matching between successive stages of N-stage voltage amplifier.
- (b)** For offering higher impedance to the input and output signals
- (c)** To allow ac and dc voltages to be applied to the transistor without affecting each other
- (d)** For stability of operating point.

**5.** The static (dc) and dynamic (ac) load lines in a self-biased common-emitter transistor are different when

- (a) a coupling capacitor exists at the input port
- (b) By-pass capacitor exist across emitter resistor
- (c) A resistive load is connected through a coupling capacitor at the output.
- (d) Both **b & c**

**6.** For current amplifier (CA), current gain ( $A_I$ ) and input impedance ( $R_i$ ) are given, what is the trans-conductance  $\left( \frac{(o/p)}{(i/p)} \right)$  of the amplifier. (Refer Figure: 6)



**Figure: 6**

- (a) 50mho
- (b) 25mho

(c)  $150mho$

(d)  $75mho$

7. What is the voltage gain achieved by the amplifier given in the Q.6

(a) 200

(b) 600

(c) 100

(d) 300

8. What are the value of voltage,  $V_o$  and mode of operation of transistor  
(Refer Figure: 8)

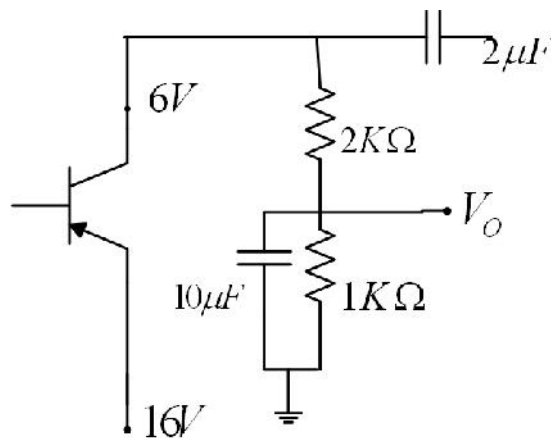


Figure: 8

(a)  $7.3V$  , Cut-off

(b)  $2V$  , Cut-off

(c)  $3.3V$  , Active

(d)  $-3.3V$  ,Active

**9.** An amplifier has a load of  $5\Omega$ , input signal of  $3\sim A$  is applied to obtain an output  $0.5A$  with input resistance value of  $4K\Omega$ . Find out its power gain.

**(a)**  $34.8 \times 10^6$

**(b)**  $34.8 \times 10^5$

**(c)**  $34.8 \times 10^7$

**(d)**  $34.8 \times 10^8$

**10.** The input and output ac voltages of the CE transistor amplifier have phase difference

**(a)**  $+180^\circ$

**(b)**  $-180^\circ$

**(c)**  $-f$

**(d)** All of these

### **Solution of objective problems**

---

1. (b)

2. (a)

3. (c)

4. (c)

5. (d)

6. (a)

7. (a)

8. (b)

9. (a)

10. (d)