



## AEC IAT 1 - 18EE34

Questions Responses 47

Total points: 50

### AEC IAT 1 - 18EE34

Answer All Questions

Time: 10AM to 11AM

Date: 15/9/2020



Student Name \*

Short answer text

USN \*

Short answer text

For the fixed-bias circuit,  $R_B=50k\Omega$ ,  $R_C=500\Omega$ ,  $V_{CC}=10V$ . Assume silicon transistor with  $\beta=50$  and  $V_{BE}=0.7V$ . Find  $I_c$ . \*

3.9mA

9.3mA

3.9 $\mu$ A

9.3 $\mu$ A

For the fixed-bias circuit,  $R_B=50k\Omega$ ,  $R_C=500\Omega$ ,  $V_{CC}=10V$ . Assume silicon transistor with  $\beta=50$  and  $V_{BE}=0.7V$ . What is the value of  $V_{CE}$ . \*



- 4.35V
- 10V
- 5.35V

For the fixed-bias circuit,  $R_B=50k\Omega$ ,  $R_C=500\Omega$ ,  $V_{CC}=10V$ . Assume silicon transistor with  $\beta=50$  and  $V_{BE}=0.7V$ . Find  $I_C(\text{sat})$  and  $V_{CE}(\text{off})$ . \*

- 20mA, 10V
- 10mA, 10V
- 20 $\mu$ A, 10V
- 10 $\mu$ A, 10V

Which of the following is the correct relationship between base and emitter current of a \*

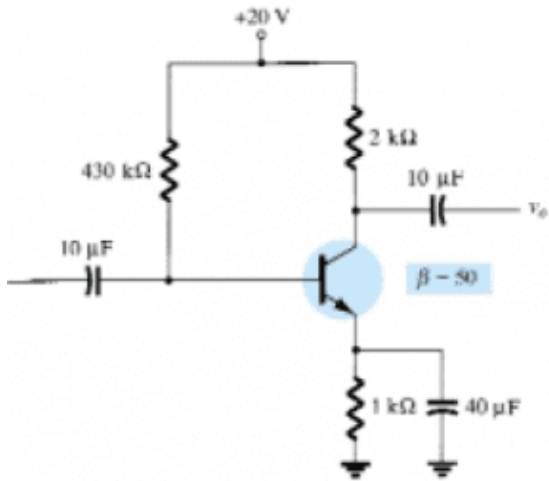
- $I_B = \beta I_E$
- $I_B = I_E$
- $I_B = (\beta + 1) I_E$
- $I_E = (\beta + 1) I_B$

For best operation of a BJT, which region must the operating point be set at? \*

- Active region
- Saturation region
- cut off region
- Reverse Active region

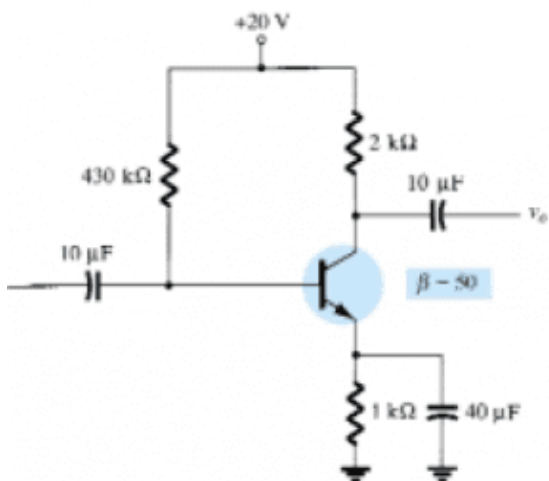


In the given circuit, what is the value of IC if the BJT is made of Silicon? \*



- 2.01 mA
- 2.01  $\mu$ A
- 10.05 mA
- 10.05  $\mu$ A

In the given circuit, what is the value of VE when using a silicon BJT? ♂ \*

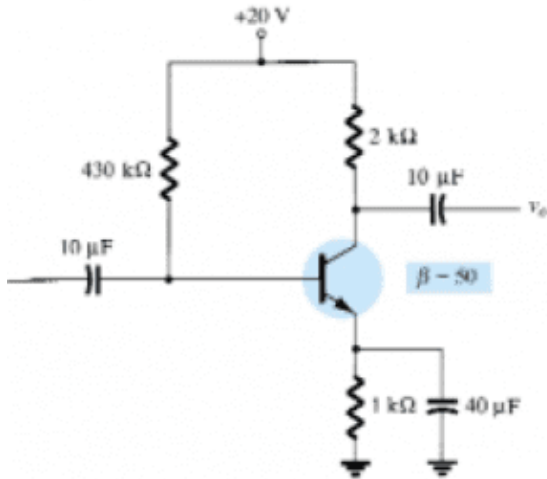


- 2.01 V



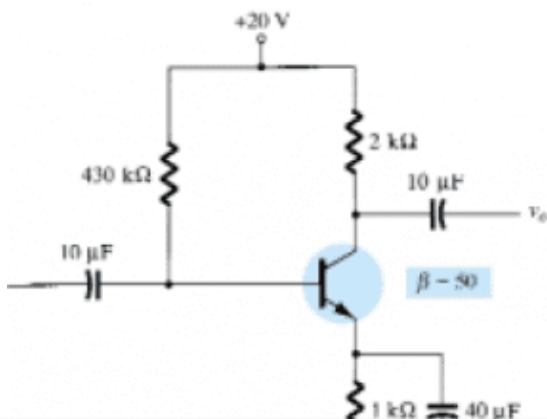
- 0 V
- 2.28 V

In the given circuit, using a silicon BJT, what is the value of  $V_{CE}$ ? \*



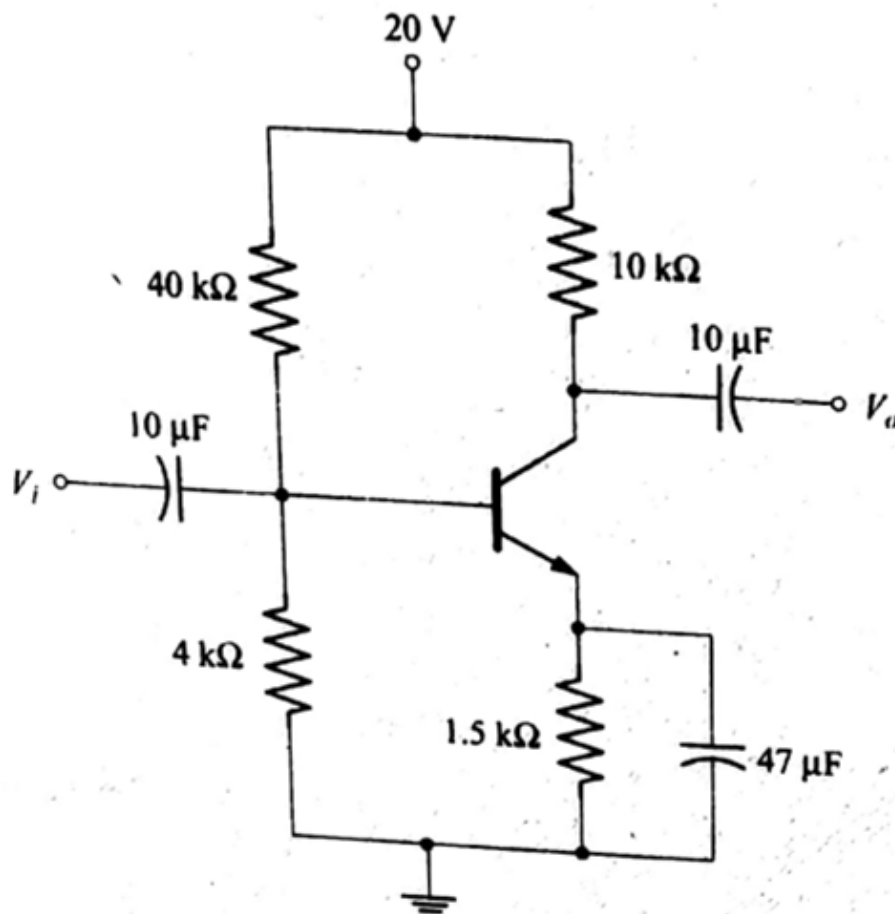
- 20 V
- 15.52 V
- 14.98 V
- 13.97 V

In the given circuit using a silicon BJT, what is the value of saturation collector current? \*



- 10 mA
- 8.77 mA
- 6.67 mA
- 5 mA

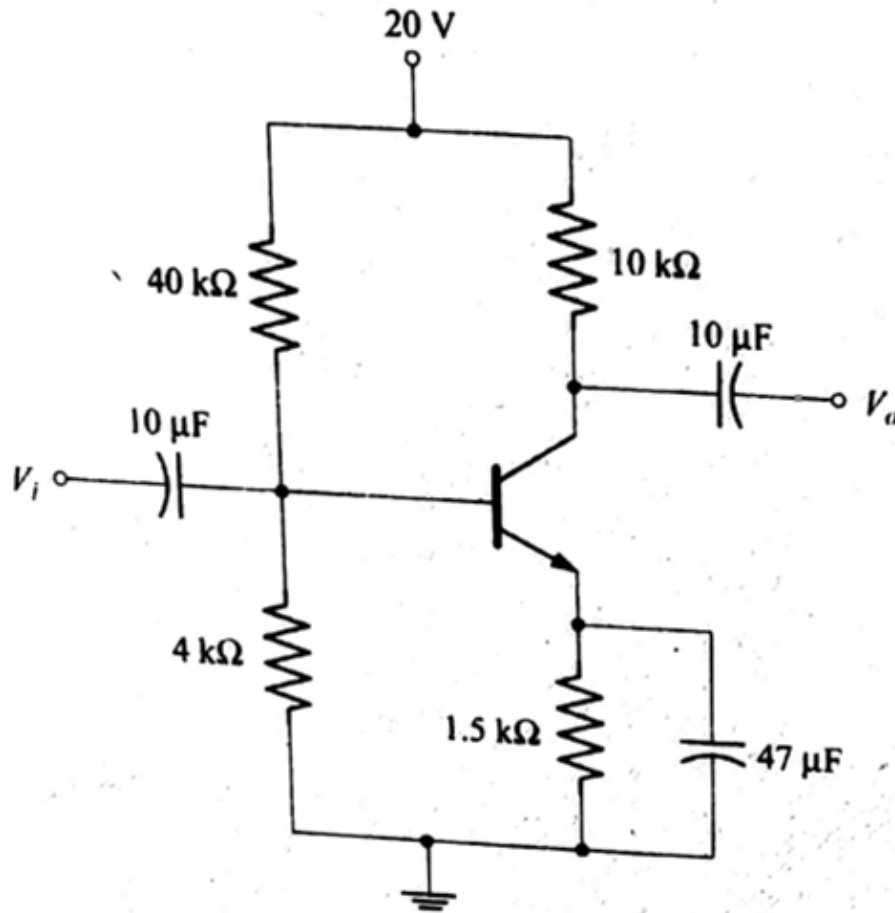
Find  $I_C$  for the circuit shown in figure. Assume Si transistor with  $\beta =$  \*



- 7.3mA
- 0.73mA
- 7.3μA
- 0.73μA



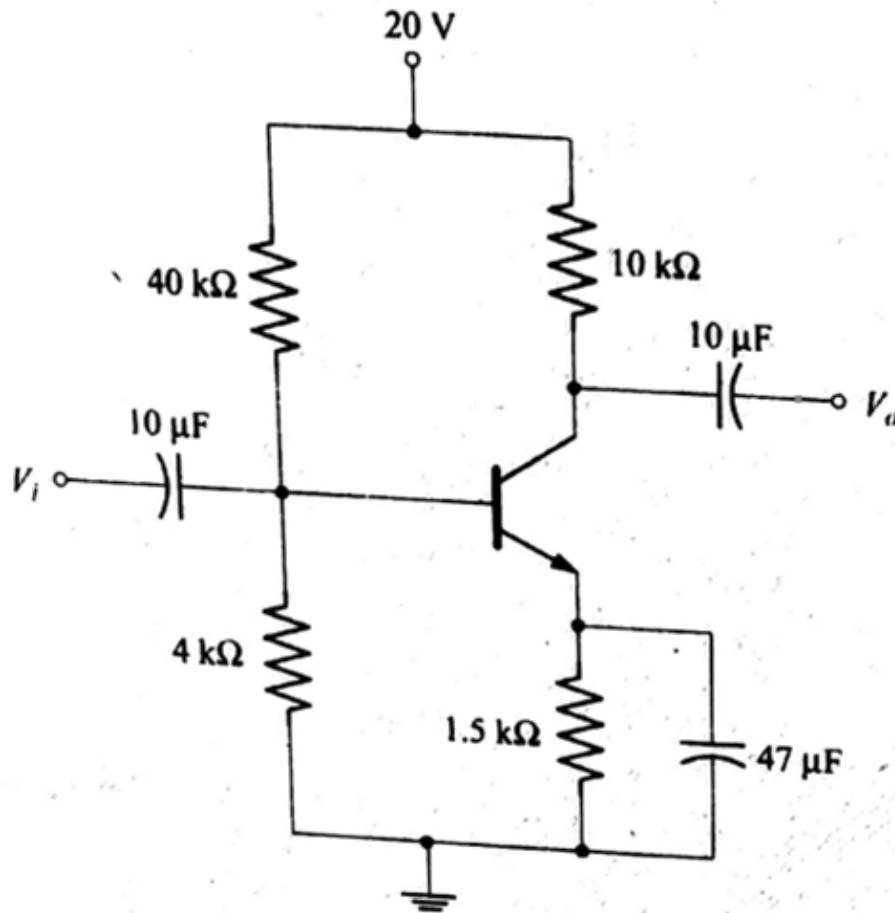
What is the value of  $V_{CE}$  for the circuit shown in figure. Assume Si transistor with  $\beta =$  \*



- 20.7V
- 14.62V
- 11.62V
- 17.62V

Find  $I_{C(sat)}$  for the circuit shown in figure. Assume Si transistor with  $\beta = 150$  \*





- 0.74mA
- 0.74μA
- 1.74μA
- 1.74mA

The values are given for the Collector Feedback Bias circuit.  $V_{CC} = 12V$ ,  $R_C = 4.7k\Omega$ ,  $R_B = 220k\Omega$ ,  $R_E = 1k\Omega$ . Assuming Si transistor with  $\beta = 90$ . Find Collector current \*

- 1.39mA
- 1.39μA
- 1.58μA



The values are given for the Collector Feedback Bias circuit.  $V_{CC} = 12V$ ,  $R_C = 4.7k\Omega$ ,  $R_B = 220k\Omega$ ,  $R_E = 1k\Omega$ . Assuming Si transistor with  $\beta = 90$ . What is the value of  $V_{CE}$  \*

- 3.08V
- 4.08V
- 5.08V
- 12V

Derive the Stability factor  $S(I_{CO})$  for fixed bias \*

- $-(1 + \beta)$
- $1 - \beta$
- $1 + \beta$
- None of the above

Derive the Stability factor  $S(V_{BE})$  for fixed bias \*

- $-\beta / R_B$
- $\beta / R_B$
- $-R_B / \beta$
- $R_B / \beta$

Which of the following is not a necessary component in a clamper circuit? \*

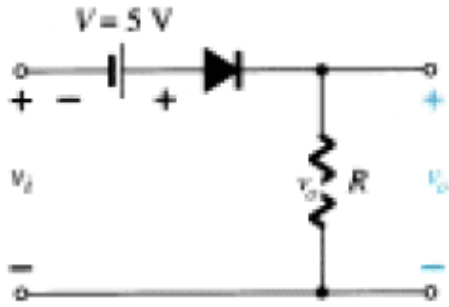
- Diode





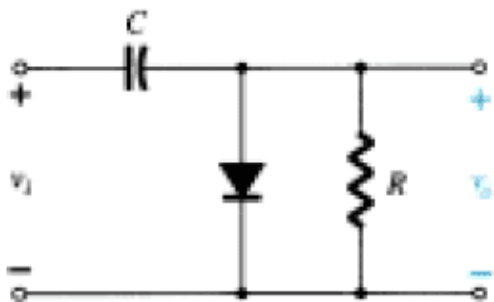
- Resistor
- Independent DC Supply

What is the circuit in the given diagram called? \*



- Voltage regulator
- Clipper
- Filter
- Clamper

What is the circuit in the given diagram called? \*



- Clipper



Half wave recrifier

Full wave rectifier

