



Program: BC (CS)

Subject: Basic Electronics

Assignment Number: 06

Course Code: CSS-102

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Spring Semester 2019

Q.1 Give answers to each of the following:

1. What is the doping level and physical size of different regions of bipolar junction transistor (BJT)?
2. Discuss the two back-to-back diodes in a BJT.
3. Discuss the flow of electrons in different regions of a biased BJT.
4. Discuss the three different currents in a biased BJT.
5. Define dc alpha (α_{dc}), dc beta (β_{dc}) for a BJT.
6. Discuss different single and double subscript voltages in a common emitter BJT circuit.
7. Discuss different regions of BJT operations.
8. Discuss variations in Current Gain (β_{dc}) due to transistor replacement, collector-current changes, and temperature.

Q.2 Draw and explain each of the following:

1. BJT regions before and after diffusion
2. BJT base curve
3. BJT collector curves
4. Common emitter connection
5. Load line and Q-point for BJT

Q.3 Find I_B , I_C , V_{CE} , and P_D in common emitter circuit in Figure 01. Also draw the load line and Q-point for the circuit.

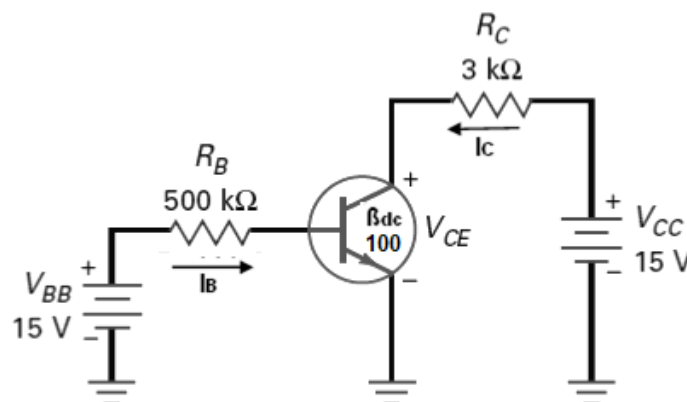


Figure 01