Unit-3 Test

Total 6 Questions are there and each question is comlulsory

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* Required

1. Write your name *

Harit Dheer

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40-ECEA-21

3. Class *

- (●) ECE A
- ( ) ECE B

4. Explain Base width modulation in BJT.(3 Marks)

As the collector voltage VCC is made to increase the reverse
bias, the space charge width between collector and base tends to increase, with the result that the effective
width of the base decreases. This dependency of base width on collector-to-base voltage is known as the
Early effect. This decrease in effective base width has three consequences:
1. There is less chance for recombination within the base region. Hence, a increases with increasing
VCB.
2. The charge gradient is increased within the base, and consequently, the current of

5. Explain output characteristics of CE configuration .(3 marks)

Output Characteristics of CE configuration- To determine the output characteristics,in CE the base current IB is kept constant at a suitable value by adjusting the base-emitter voltage, VBE. The magnitude of the collector-emitter voltage VCE is increased in suitable equal steps from zero and the collector current IC is noted for each setting VCE. Now, the curves of IC versus VCE are plotted for different constant values of IB. The output characteristics thus obtained through the graph.

6. In a grounded base configuration ,Ic is 0.96 mA and base current is 50uA.calculate alpha and beta

- ○ 0.99 and 20
- ◉ 0.95 and 19.2
- ○ 0.95 and 20
- ○ 0.99 and 18

7. IN CB arrangement ,a voltage drop of 5V is obtained across load 5Kohm, connected in collector circuit. If alpha is 0.99,find Ic and Ib.

- ○ 1mA and 0.1mA
- ○ 1.2 mA and 1mA
- ◉ 1mA and 0.01mA
- ○ Other

8. In CE transistor ,Vce changes from 5V to 10 V, causes the change in collector current from 5 mA to 5.8 mA. Determine dynamic output resistance.

- (●) 6.25mA
- ( ) 5.5mA
- ( ) 6mA
- ( ) Other

9. In a CE transistor ,at Vce of 1 V ,Vbe is adjusted to give a collector current of 1 mA. Keeping Vbe constant ,Vce is increased to 11 V. Find the new value of Ic if the early voltage Va is 100V.

- (●) 1.1mA
- ( ) 2mA
- ( ) 1 mA
- ( ) Other

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