North South University
Department of Electrical and Computer Engineering
EEE/ETE 111L
Fall 2021
Quiz 02
ANSWER ALL THE QUESTION
Total Marks: 25 (Time: 30 Minutes)

N.B.: Write each formula clearly. Don't forget to use correct unit!

1. The characteristics of a BJT transistor are measured by two characteristics curve (Figure: A) — 6 pts
   i. Write the name of the two curves given below. — 2
   ii. What are the name of the variables, a, b, x, y, z in the curves given below? — 2.5
   iii. What is the function of a BJT? — 1.5

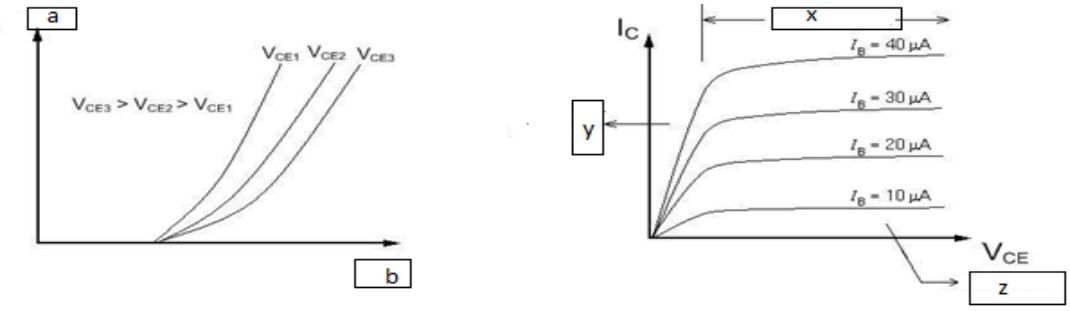

Figure: A

2. Consider the circuit of Figure B. — 8 pts
   a. What do you understand by "Biasing a BJT circuit"? — 2
   b. What are the names of the circuits (Fig. B)? — 2
   c. Draw the symbol of the transistor used in the circuit with proper labelling. — 1
   d. During the lab experiment which circuit showed better stability? — 1
   e. Mention TWO differences between BJT and MOSFET you observed during experiment. — 2

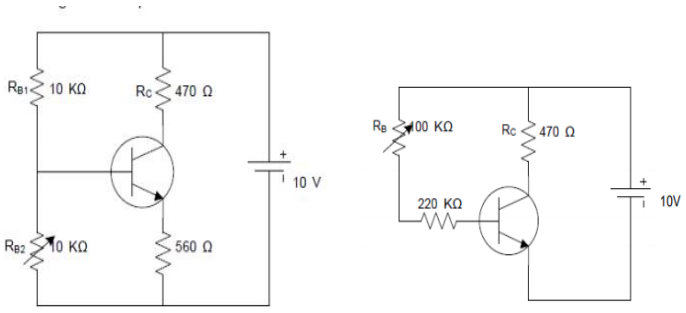

Figure: B

3. What is the name of the equipment of given below? What are the function of A, D, and E? (A→ cursor, D→ Volt/Div, E → Sec/Div) 4 pts 1+3

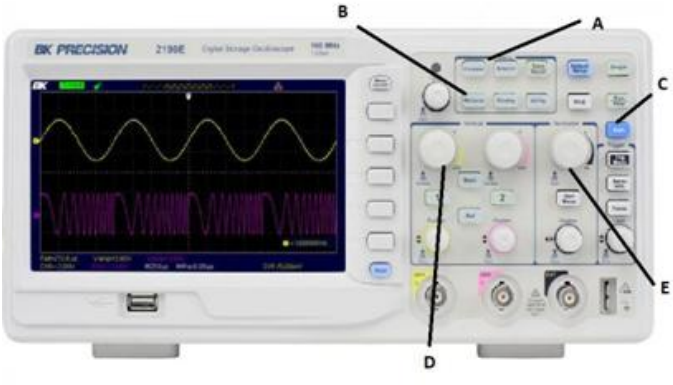

Figure: C

4. What is the name of the graph given below? From the experiment explain how does a MOSFET work in the three working region mentioned in the graph? 3 pts 1+2

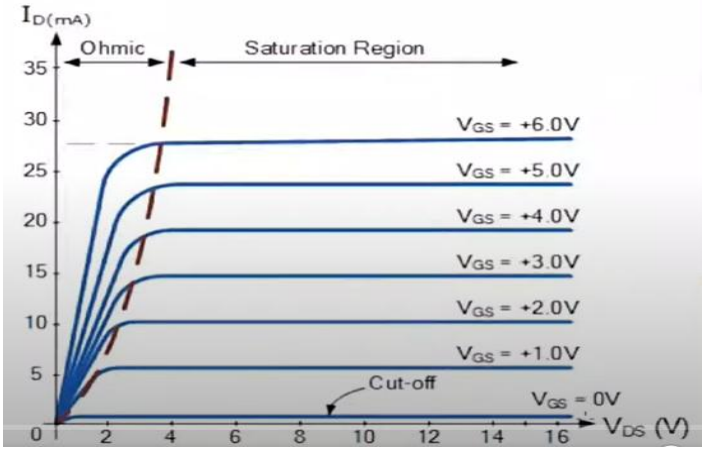

Figure: D

5. **True/ false and Fill in the blanks:** 4 pts
   a. When forward biased voltage is applied to the p-n junction diode, the width of depletion region decreases. ( ) 1
   b. BJT is a current controlled device whereas MOSFET is a voltage controlled device. ( ) 1
   c. Zener diode permits current to flow in the (i) ..... direction as normal diode, but will also allow it to flow in the reverse direction when the voltage is above a certain value of the breakdown voltage known as the (ii) ..... voltage. 2