

**Due date:** You need to submit a report to XMUT co-teacher; please contact him for how and when to submit it.

1. Present your measurements on the different transistor terminals using the DVM and explain the construction of the BJT based on these measurements. [15 marks]
2. Explain the role of the current limiting resistors in your circuit and show the limits they will place on the currents that flow. [10 marks]
3. What value did you obtain for  $\beta$  from your measurements of  $I_B$  vs  $I_C$ ? How did these values vary? How does it compare to the value obtained by the transistor tester? [15 marks]
4. Plot your results of  $I_C$  against  $V_{BE}$  from Section 4 and explain the significance of these results. [20 marks]
5. Sketch your family of  $I_C$  vs  $V_{CE}$  curves from Section 5. Identify the three regions of transistor operation on this graph. Calculate values of  $\beta$  from the graph. How consistent are these values? [20 marks]
6. Plot your results of  $V_{in}$  vs  $V_{out}$  from Section 6 and explain why you observe this effect. Suggest some uses for this type of circuit. [20 marks]

## Marking Schedule

Student Name : \_\_\_\_\_

Student ID : \_\_\_\_\_

No	Section	Mark	Your Mark	Remarks
	<b>Questions</b>			
1	Present your measurements on the different transistor terminals using the DVM and explain the construction of the BJT based on these measurements.	15		
2	Explain the role of the current limiting resistors in your circuit and show the limits they will place on the currents that flow.	10		
3	What value did you obtain for $\beta$ from your measurements of $I_B$ vs $I_C$ ? How did these values vary? How does it compare to the value obtained by the transistor tester?	15		
4	Plot your results of $I_C$ against $V_{BE}$ from Section 4 and explain the significance of these results.	20		
5	Sketch your family of $I_C$ vs $V_{CE}$ curves from Section 5. Identify the three regions of transistor operation on this graph. Calculate values of $\beta$ from the graph. How consistent are these values?	20		
6	Plot your results of $V_{in}$ vs $V_{out}$ from Section 6 and explain why you observe this effect. Suggest some uses for this type of circuit.	20		
	<b>Total</b>	100		

**Comment:**