Islamic University in Madinah, Faculty of Engineering, Electrical Engineering Department
EE 212 - Lab Final Exam - Fall Semester 2017
Student ID #: _____

not clear how Get data?

I_B (calculated)	18.82 μA
I_C (calculated)	5.77 mA
β (calculated)	340.55
V_B (measured)	0.566 V
V_C (measured)	7.792 V
V_{CE} (measured)	2.705 V
V_B (calculated)	0.7 V
V_C (calculated)	7.68 V
V_{CE} (calculated)	2.67 V
% error V_B	4.8 %
% error V_C	1.07 %
% error V_{CE}	0.0281 %

10. Compare and comment about the discrepancies in the measured and calculated values of V_B, V_C and V_{CE} based on % error. it's have some different between And The value of calculate it's more accurate than measured Because We use ideal thing but in measured the component it's not ideal

11. Which is more stable biasing circuit, common emitter or voltage divider? Comment.

Voltage divider is more stable Because it's more useful in our Live and we can used in different ways in our Live Because voltage divide make path close

CALCULATIONS

$I_B = \frac{V_{cc} - V_{BE}}{R_B} = 18.82\ \mu A$

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

$I_C = \frac{V_B}{R_C} = 6.42 \times 10^{-3}$

$\beta = \frac{I_C}{I_B} = 340.55$

$V_{CE} = ?$

V_B it's a dead

$V_C = V_{CC} - V_{R_C} = 2.68\ V$

or $V_C = V_{CB} \cong 7.68$

$V_{CE} = V_C - V_E = V_C = 7.68$

not clear details

Islamic University Faculty of Engineering Department of Electrical Engineering		الجامعة الإسلامية كلية الهندسة قسم الهندسة الكهربائية

EE 212 - ELECTRONICS I

Fall Semester 2017

LAB FINAL EXAM

Grade

Name, Family Name: [redacted]

ID [redacted] **Section No.: 1050 Signature:** _____

[CO_12, PI_2_35, SO_2]

Instructions:

- **Write your student ID number on the top of each page.**
- **Show all the details of your analysis and calculations.**

1. Consider the circuit shown in Figure 1. Let R_C = 2.7 kΩ, R_B = 1 MΩ.
2. Measure and record each resistor value in Table 1.
3. Measure the voltages V_{BE}, V_{BC} and record them in Table 1.
4. Calculate the voltages of V_{BE}, V_{BC} and record the values in Table 1.
5. Calculate the currents I_B, I_C and record the values in Table 1.
6. Calculate the β and record the value in Table 1.
7. Measure the voltages V_B, V_C and V_{CE}, and record the values in Table 1.
8. Calculate the voltages V_B, V_C and V_{CE}, and record the values in Table 1.
9. Calculate the % error between the measured and calculated values of V_B, V_C and V_{CE} and record them in Table 1.

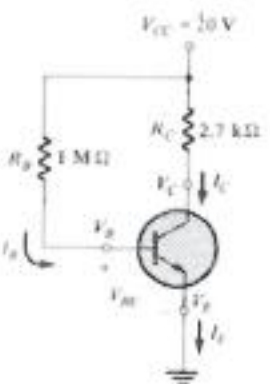

Figure 1

Table 1

Parameter	Values
R_C (measured)	2.661 kΩ
R_B (measured)	1.022 MΩ
V_{BE} (measured)	0.666 V
V_{BC} (measured)	17.333 V
V_{BE} (calculated)	0.7 V
V_{BC} (calculated)	17.36 V

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LAB FINAL EXAM

GRADING TABLE

Section No.: 1050

Name, Family Name: [redacted]

[CO_12, PI_2_35, SO_2]

Contents	Grade	Comments
Circuit connections	12 /12	
Circuit Functioning	12 /12	
R_C (measured)	4 /4	
R_B (measured)	4 /4	
V_{BE} (measured)	4 /4	
V_{RC} (measured)	4 /4	
V_{BE} (calculated)	2 /3	
V_{RC} (calculated)	Zero /3	
I_B (calculated)	3 /3	
I_C (calculated)	1 /3	
β (calculated)	4 /4	
V_B (measured)	4 /4	
V_C (measured)	4 /4	
V_{CE} (measured)	4 /4	
V_B (calculated)	3 /3	
V_C (calculated)	3 /3	
V_{CE} (calculated)	3 /3	
% error V_B	3 /3	
% error V_C	3 /3	
% error V_{CE}	2 /3	
Analysis	Okay /8	
Calculation details	okay /6	
Total	89 /100	