



UTM
UNIVERSITI
TEKNOLOGI MALAYSIA

Sekolah Pendidikan
Profesional dan
Pendidikan Berterusan
(SPACE)

**JABATAN KEJURUTERAAN ELEKTRIK
PUSAT PENGAJIAN DIPLOMA (PPD), SPACE
UNIVERSITI TEKNOLOGI MALAYSIA
KUALA LUMPUR**

**ELECTRICAL ENGINEERING LABORATORY 2
(DDWE 2701)**

ELECTRONICS 1

REPORT SHEET 3

**BIPOLAR JUNCTION TRANSISTOR (BJT) AND FIELD
EFFECT TRANSISTOR (FET) :
DC ANALYSIS**

Group members	1.
	2.
	3.
Lecturer	:
Date	:

No.	PO	CO	Student Marks	Marks
1	PO1	CO1		50%
2	PO2	CO3		40%
3	PO8	CO6		10%
Total Marks				/ 100%

EXPERIMENT 3 : BIPOLAR JUNCTION TRANSISTOR (BJT) AND FIELD EFFECT TRANSISTOR (FET) : DC ANALYSIS

Part A : DC Biasing

	I_B (μA)	I_C (mA)	β	I_E (mA)	V_B (V)	V_E (V)	V_C (V)	V_{CE} (V)
Measurement								
Calculation								

Table 1

PO1	CO1 /10m
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1. Refer to Table 1, Compare the measurement and calculation results. Discuss the results.

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PO1	CO1 /6m
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PART B: BJT : SWITCHING CIRCUIT

Sketch of V_i and V_o

PO1	CO1 /8m
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2. Refer to the graph, Compare the measurement with theory. Discuss the results.

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Part C : D-MOSFET : DETERMINATION OF SATURATION CURRENT, I_{DSS} AND PINCH OFF VOLTAGE, V_p

I_{DSS} (mA)	0	
V_P (V)		0

Table 2

PART D : D-MOSFET : DC Analysis

	I_D (mA)	V_{GS} (V)	I_s (mA)	I_G (mA)	V_{DS} (V)	V_D (V)	V_s (V)	V_G (V)
Measurement								
Calculation								

Table 3

PO1	CO1	/10m
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3. Refer to Table 3, Compare the measurement and calculation results. Discuss the results.

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PO1	CO1	/6m
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4. Conclusion

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PO1	CO1	/6m
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TOTAL MARKS (PO1, CO1) =

		Marks	PO2	PO8
Group members	1.			
	2.			
	3.			
	4.			
	5.			
Lecturer	:			
Date	:			

PO2 (Psychomotor/Hands On Skills) for LABS Experiments

	Criteria	Very poor (5 Marks)	Poor (10 Marks)	Moderate (15 Marks)	Good (20 Marks)	Excellent (25 Marks)
1	Ability to perform lab works based on the manual/ guidelines provided	Not at all	Quite Limited /Selectively	Can perform lab work moderately but require a lot of guidance	Can perform lab work systematically and only need minor guidance	Demonstrate systematic and excellent performances
2	Ability to perform simple lab work without supervision	Need full supervision	Major supervision	Minor supervision	Limited supervision	Work independently With no supervision
3	Ability to carry out lab work efficiently on the following criteria, (circuit assembly, using measurement apparatus and techniques)	Not able to construct a full circuit, poor/inaccurate measurement techniques/usage of equipment	Completed full circuit but poor/inaccurate measurement techniques/usage of equipment	Completed full circuit and it works successfully. However the measurement techniques/usage of equipment had some minor deficiency	Completed full circuit and it works successfully. However the measurement techniques/usage of equipment had produced a few errors/corrections.	Circuit was completed and works properly without any errors /corrections. Also demonstrated an excellent skills/conducts.
4	Ability to collect the required data, performs appropriate analysis and/or troubleshooting (if necessary).	Not able to collect data and/or perform analysis	Limited data collection but not able to perform analysis/ troubleshooting	Demonstrates major errors in data collection and /or analysis. Limited ability in troubleshooting	Minor error in data collection and analysis. Good approach/techniques in troubleshooting	Data collection and data analysis are done systematically and performs excellent approaches to trouble shoot (if necessary)

		Marks	PO2	PO8
Group members	1.			
	2.			
	3.			
	4.			
	5.			
Lecturer				
Date				

PO8 for LABS Experiments

	Criteria -Understand the conducts, ethical values and socio-cultural impacts on professional norm and practice	Very poor (5 Marks)	Poor (10 Marks)	Moderate (15 Marks)	Good (20 Marks)	Excellent (25 Marks)
1	Professional Practice (Punctuality/Follow the Rules)	Non-Conforming/In-punctuality	Not always Conforming/ Not always punctual	Sometimes Conforming/ Sometimes punctual	Conforming /Punctual	Always Conforming /Always Punctual
2	Ethical Conduct/Behaviour (Trustworthy / Respectfulness)	Does not practice	Not always practicing	Sometimes only	Mostly practicing	Always practicing
3	Social Cultural (Racial Harmony)	Does not observe	Not always observe	Sometimes observe	Mostly observe	Always observe
4	Personality	Mostly unpleasant	Not always pleasant	Moderately pleasant	Mostly pleasant	Always pleasant