Nama :

Kelas :

LABORATORY REPORT

MARA JAPAN INDUSTRIAL INSTITUTE
BERANANG
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JS02

COURSE/CLASS :	DIPLOMA IN ELECTRONICS ENGINEERING		
SESSION :		SEMESTER :	3
CODE/SUBJECT :	DFV31153 / ANALOGUE ELECTRONIC 2	SHEET NO :	*JS 02*
NO OF STUDENTS :		WEEK :	
DURATION :	3 hour	VENUE :	Electronic Devices Lab
LECTURER :			

TOPIC :	**POWER SUPPLY (VOLTAGE REGULATOR)**
SUB-TOPIC :	**VOLTAGE REGULATOR CIRCUIT**
LEARNING OUTCOME :	At the end of the lesson, students should be able to : 1. Measure the dc output voltages of resistor load. 2. Study the performance of simple series regulator, shunt voltage regulator and IC regulator.

TOOLS / EQUIPMENTS / MATERIALS :	**INSTRUMENTS :** 1. Digital Multimeter 2. Edibon Development Module (M15) 3. Edibon Power Supply Module (M5) **COMPONENTS :** 1. 2N3904 - 2 2. 1N5327 8.2 V – Zener diode - 2 3. Resistor 1kΩ - 2 4. Resistor 3.3kΩ - 2

PROCEDURE

STEP	KEY POINT
PART 1: Series Voltage regulator.	1. Calculate the output voltage and zener current in Figure 1 for input voltage, V_S = 4V, 6V, 8V, 10V and 12V 2. Simulate circuit in Figure 1 using MULTISIM software. 3. Assemble circuit as Figure 1. 4. Vary V_S, measure and record the output voltage V_O in table 1.

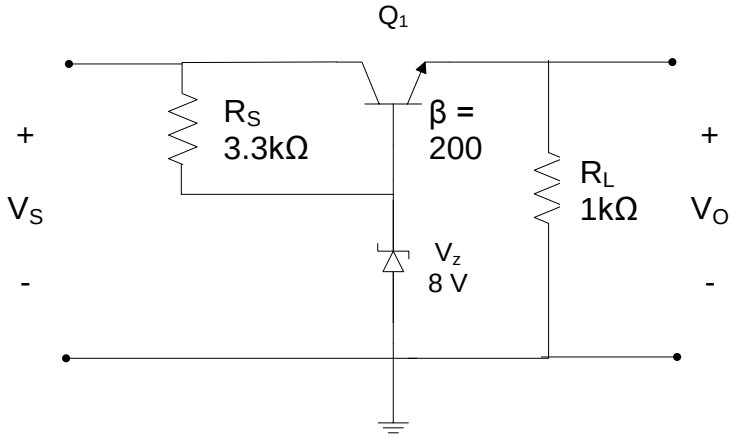

Figure 1.1

RESULT (PART 1)

V_{in}	4V	6V	8V	10V	12V
V_O Calculated					
I_Z Calculated					
V_O Simulated					
I_Z Simulated					
V_O Measured					
I_Z Measured					

TABLE 1

STEP	KEY POINT
PART 2: Shunt voltage regulator circuit.	1. Calculate the output voltage and transistor current in Figure 2 for input voltage, V_S = 4V, 6V, 8V, 10V and 12V 2. Simulate circuit in Figure 2 using MULTISIM software. 3. Assemble circuit as Figure 2. 4. Vary V_S, measure and record the output voltage V_O in table 2.

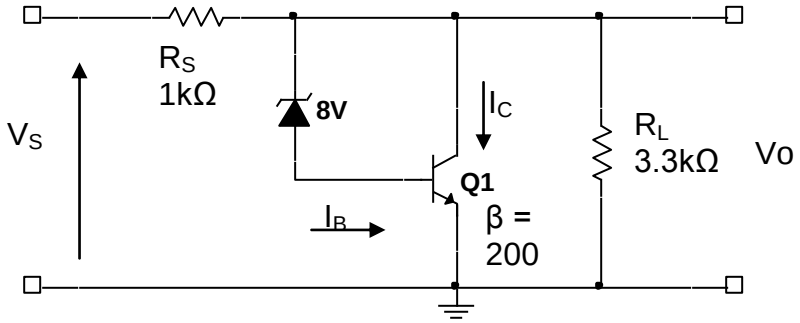

Figure 2

RESULT (PART 2)

V_{in}	4V	6V	8V	10V	12V
V_O Calculated					
I_C calculated					
V_O Simulated					
I_C Simulated					
V_O Measured					
I_C Measured					

Table 2

DISCUSSION

1. Sketch output voltage, V_O against input voltage, V_S for part 1 and part 2

2. Discuss your finding in Part 1 and Part 2

3. Compare the data using the values obtain in Part 1 and Part 2. Comment the regulation behavior for each circuit.

CONCLUSION

MARA JAPAN INDUSTRIAL INSTITUTE	**PRACTICAL MARKING SCHEME (A1)**	
PROGRAMME :	DIPLOMA IN ELECTRONIC ENGINEERING (DKC,DKE,DKM,DKR,DKS)	**DURATION:**
TOPIC:	JOBSHEET 1/2/3/4/5/6	2 HOURS
COURSE:	DFV31153 ANALOGUE ELECTRONICS 2	**WEIGHTAGE:**
RELATED CLO:	Display the skill to conduct experiments on electronic devices circuit. (PLO4, P4)	20%
STUDENT NAME :		
SEM / SESSION :		

SECTION A: CRITICAL ASSESSMENT

No.	Mark √ for type of critical item to be assessed.						Mark √ = YES if follow the criteria	
	1. Functional	2. Accuracy	3. Finishing	4. Agility	5. Endurance	6. Safety	Mark X = NO if not follow the criteria	
							YES	NO
1	No critical items						√	

SECTION B: WORKING PROCESS ASESSMENT [100%]

No.			Criteria	Basic Mark	Factor / FP	Obtain Basic Mark	Obtain Mark
WORK PROCESS							
	DOMAIN		**PLANNING (DP1- DK6 : PRACTICAL ENGINEERING KNOWLEDGE)**				
1	**CLO2: P4**	1.1	**Able to translate & interpret facts in the experimental context.**				
			i) Not able to read or interpret the procedure	0	0.67		
			ii) Poor to read or interpret the procedure but with guidance	1			
			iii) Able to read or interpret the procedure but with guidance	2			
			iv) Able to read or interpret the procedure which occupy to specification without guidance.	3			
2	**CLO2: P4**	2.1	**Calculate parameter value (DP2 : RANGE OF CONFLICTING)**				
			i) Not able to do the task	0	1.33		
			ii) Able to calculate and applying formulae / theorem but not complete	1			
			iii) Able to calculate and applying formulae/ theorem to proof theoritical expected value but not correctly	2			
			iv) Able to calculate and applying formulae/ theorem to proof theoritical expected value correctly and precisely	3			
		2.2	**Skills of Handling Instrument/ Tools (DP2 : RANGE OF CONFLICTING)**				
			i) Poor to handle tools/ equipment	1	1.33		
			iii) Able to handle tools /equipment correctly with guidance	2			
			iii) Able to use tools/ equipment and equipment correctly without guidance	3			
		2.3	**Measurement Method (DP2 : RANGE OF CONFLICTING)**				
			i) Poor to apply measurement method	1	1.33		
			iii) Able to apply measurement method correctly with guidance (eg: voltage-in parralel; current- in series)	2			
			iii) Able to apply measurement method correctly without guidance	3			
RESULT / OUTCOME / SKILLS							
	DOMAIN		**DATA RECORDING/ RESULT (DP3- DEPTH OF ANALYSIS)**				
3	**CLO2: P4**	3.1	**Data Recording**				
			i) Not able to do the task	0	0.67		
			iii) Able to record **PART** of data and observation in logbook / prepare lab sheet	1			
			iii) Able to record **ALL** data and observation in logbook / prepare lab sheet	2			
			iii) Able to record **ALL the relevant and vital** data and observation in logbook / prepare lab sheet completely according to spesifications (complete unit) and neatness	3			
		3.2	**Component / Electrical parameter measurement**				
			i) More / Less ± 50% from exact value (out of range)	0	1.00		
			ii) Almost accurate (within acceptable range)	1			
			iii) Accurate	2			
		3.3	**Complying the tasks / questions given or produce graph**				
			i) Not able to do the task	0	0.67		
			ii) Able to comply the tasks / questions given but not completely	1			
			iii) Able to comply the tasks / questions given completely	2			
			iv) Able to comply the tasks / questions given completely according to spesifications	3			
					Obtain Marks		
					Total Marks		100.0
					Total Marks 20%		

VERIFICATION

SIGNATURE & OFFICIAL STAMP:

DATE: