



United International University (UIU)
Dept. of Computer Science & Engineering (CSE)
Mid-Term Examination

CSE 123: Electronics, Trimester: Summer 2020
Total Marks: 20, Duration: 1 hour+15 minutes

Instructions: Please read the instructions carefully

- You must answer **all** questions.
- Write your **name** and **ID** at the **top-right corner** in every page of your answer script.
- **Red pens (ballpoint/gel) must be avoided** throughout the answer script.

1. "Current flows due to majority carriers only during forward bias connection of a diode" - Justify this statement with necessary diagram. [CO-1] [4]
2. For the following circuit, find the values of I_1, I_2, I_3, I, V_o & V_{o1} . [CO-2] [7]

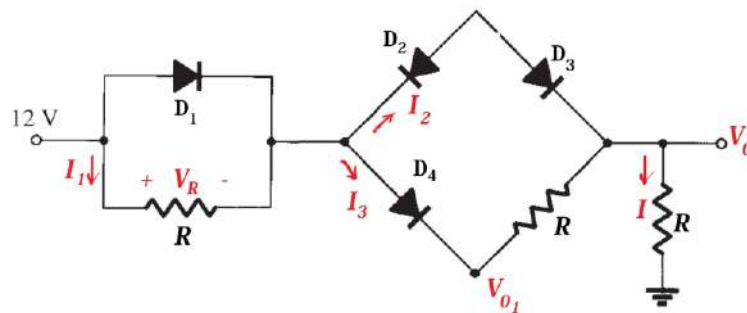


Figure for Q-2

3. Consider the following rectifier circuit: [CO-2] [6]
- (a) Derive an expression for v_o .
- (b) If the DC level of v_o is 5 V, what will be $v_{i,max}$?
- (c) Sketch v_o indicating the peak values of v_i & v_o .
- (d) Is this circuit suitable for signal rectification? Explain your answer.

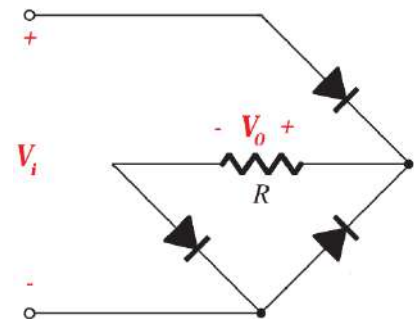


Figure for Q-3

4. What will happen if all four diodes of a full wave diode bridge rectifier are not identical? Explain in details. [CO-1] [3]

Question No	Parameter	Unit	Value
Q-2	$V_{on,D1}$ & $V_{on,D3}$	Volt	Last digit of your ID/4
	$V_{on,D2}$ & $V_{on,D4}$	Volt	Last digit of your ID/2
	R	k Ω	Last digit of your ID
Q-3	V_{on} (all diodes)	Volt	Last digit of your ID/5
	R	k Ω	Last digit of your ID

Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules