



Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science & Engineering

Midterm Examination, Fall 2026

Course Code: CSE215, Course Title: Electronic Devices and Circuits

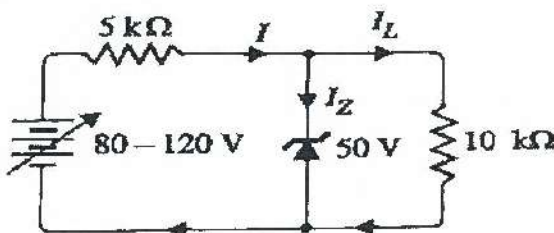
Level: 2 Term: 2 Batch: 69

Time: 01:30 Hrs

Marks: 25

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	a)	Define Semiconductor.	[1]	CO1
	b)	Describe the temperature effect on Semiconductor.	[1]	
	c)	Recall potential barrier in a <i>pn</i> junction.	[1]	
	d)	Draw the circuit for common base connection of transistor.	[1]	
	e)	Draw the symbol of <i>npn</i> and <i>pnp</i> transistor and specify the leads.	[1]	
2.	a)	Show that, $\beta = \frac{\alpha}{1-\alpha}$	[4]	CO2
	b)	Explain the working principle of a full wave diode rectifier.	[4]	
3.	a)	Identify the maximum and minimum of Zener diode current for the given circuit below in fig.01.	[4]	CO3
		 <p style="text-align: center;">fig.01</p>		
	b)	Construct a voltage stabilizer for varying load using two Zener diodes of 13V, which are connected in series. Series and load resistance are 3KΩ and 5KΩ respectively and the supply voltage is 40 V. Solve the problem for (i) the output voltage (ii) the voltage drop across series resistance and (iii) the current through the Zener diode.	[4]	

- c) For the common base circuit shown in fig.02, solve for, I_C and V_{CB} . Assume the transistor to be of silicon. [4]

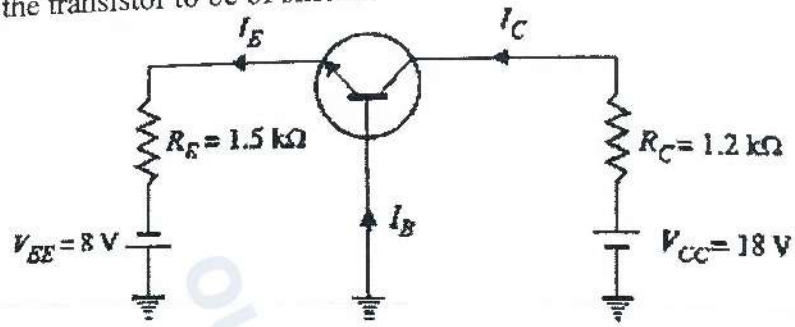


fig.02