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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Summer 2026
Course Code: CSE215, Course Title: Electronic Devices and Circuits
Level: 2 Term: 2 Batch: 68

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 Ripple Factor.	[1]	CO1
	b)	Why is silicon preferred over germanium in modern semiconductor devices?	[1]	
	c)	What do you mean by Peak Inverse Voltage?	[1]	
	d)	What is hole current in semiconductor?	[1]	
	e)	Define Knee voltage.	[1]	
2.	*a)*	Explain the biasing of a PN junction with proper diagram.	[4]	CO2
	b)	Show that in half-wave rectification, a maximum of 40.6% of a.c. power is converted into d.c. power.	[4]	
3.	*a)*	A transistor is connected in common emitter (CE) configuration in which collector supply is 10V and the voltage drop across resistance R_C, connected in the collector circuit is 0.6V. The value of R_C =900 Ω. If $\alpha = 0.94$, Solve for: (i) Collector-emitter voltage (ii) Base current	[4]	CO3
	b)	A voltage regulator circuit uses two zener diodes, each rated at 10 V and 250 mA, as shown in Fig. 01. If the circuit is connected to a 45 V unregulated supply and load resistance is 1kΩ, solve for: (i) The regulated output voltage across R_L (ii) The value of series resistance R	[4]	

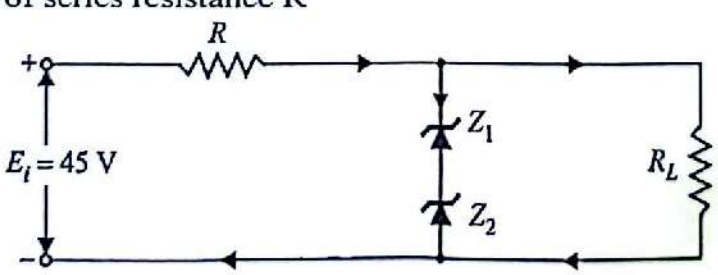
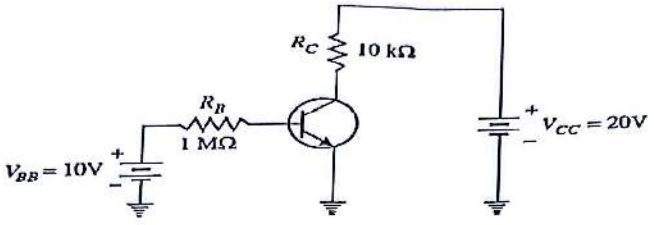


Fig. 01

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	c)	The transistor shown in Fig. 02 is of silicon and has $\beta = 100$. Solve for: i) Base current ii) Collector current and iii) Collector-Emitter Voltage  Fig. 02	[4]	CO3

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