



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 $R_C = 900 \Omega$. 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 $1k\Omega$, solve for: (i) The regulated output voltage across R_L (ii) The value of series resistance R	[4]	

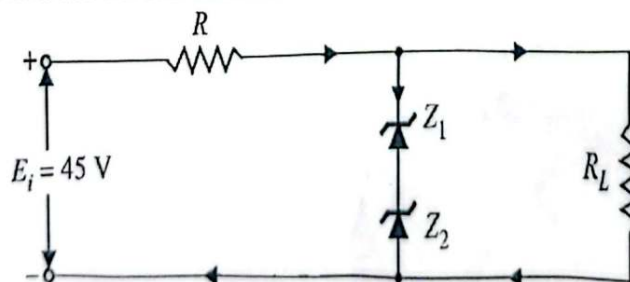


Fig. 01

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

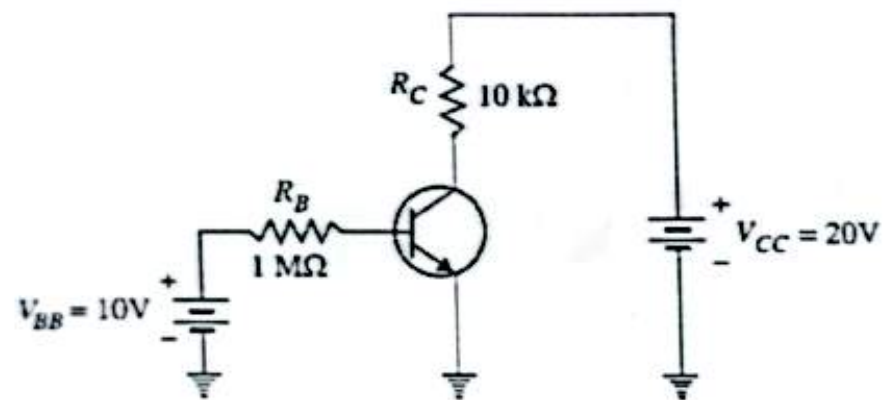


Fig. 02

[4]

CO3