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**G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.**



**UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.**

(For those admitted in June 2023 and later)

**PROGRAMME AND BRANCH: B.Sc., ELECTRONICS**

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
I	PART-III	CORE - 1	U23EL101	ELECTRONICS DEVICES

**Date & Session: 23.04.2025/AN**

**Time: 3 hours**

**Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	<b>SECTION – A (10 X 1 = 10 Marks)</b> <b>Answer ALL Questions.</b>
CO1	K1	1.	The forward voltage drop across a silicon diode is about. a) 0.3V                      b) 0V                      c) 0.7V                      d) 0.62V
CO1	K2	2.	A Zener diode is used as. a) an amplifier                      b) a voltage regulator c) a rectifier                      d) a multivibrator
CO2	K1	3.	Which of the following is a Bipolar Device? a) BJT                      b) UJT                      c) FET                      d) MOSFET
CO2	K2	4.	The $\alpha$ of a transistor should be. a) 1                      b) $<1$ c) $>1$ d) 0.1
CO3	K1	5.	A JFET has three terminals, namely _____. a) Cathode, anode, grid                      b) emitter, base, collector c) source, gate, drain                      d) drain, source, gate
CO3	K2	6.	What is the full form UJT? a) Uni Junction Transistor                      b) Universal Junction Transistor c) Union Junction Transistor                      d) Uniform Junction Transistor
CO4	K1	7.	SCR is abbreviated as _____. a) Silicon controlled rectifier                      b) Silicon conducting rectifier c) Silicon-controlled resistor                      d) Silicon conducting resistor
CO4	K2	8.	A MOSFET has _____ terminals. a) Two                      b) five                      c) four                      d) three
CO5	K1	9.	LED full form is _____. a) Lightly Emitting Diode                      b) Light Emitting Diode c) Light Effect Diode                      d) Lightly Effect Diode
CO5	K2	10.	What is full form of LCD? a) Liquid catalogue display                      b) Liquid crystal display c) Liquid crystal data                      d) Liquid code display
Course Outcome	Bloom's K-level	Q. No.	<b>SECTION – B (5 X 5 = 25 Marks)</b> <b>Answer ALL Questions choosing either (a) or (b)</b>
CO1	K3	11a.	Define an intrinsic semiconductor with a neat sketch.
			<b>(OR)</b>
CO1	K3	11b.	How does a Zener diode act as a voltage regulator?

CO2	K3	12a.	Illustrate the working principle of the NPN transistor. <b>(OR)</b>
CO2	K3	12b.	Describe shortly about the common collector configuration.
CO3	K4	13a.	Discuss the constructional details of JFET. <b>(OR)</b>
CO3	K4	13b.	Discuss the constructional details of UJT.
CO4	K4	14a.	Draw the V-I characteristics curve of a SCR and explain it. <b>(OR)</b>
CO4	K4	14b.	Draw the symbol of N-Channel Enhancement MOSFET and explain its working principle.
CO5	K5	15a.	What are the characteristics of LDR? <b>(OR)</b>
CO5	K5	15b.	What are the various digits that can be displayed using a 7-segment LED?

Course Outcome	Bloom's K-level	Q. No.	<p align="center"><b>SECTION – C (5 X 8 = 40 Marks)</b>  <b>Answer <u>ALL</u> Questions choosing either (a) or (b)</b></p>
CO1	K3	16a.	Describe the two working principles of PN junction diode with a neat diagram. <b>(OR)</b>
CO1	K3	16b.	Draw the characteristic curve of a Zener diode and explain it.
CO2	K4	17a.	How does a transistor work under the common base configuration? <b>(OR)</b>
CO2	K4	17b.	Detail the voltage divider biasing of a transistor.
CO3	K4	18a.	What would happen if the gate closed in the JFET circuit? <b>(OR)</b>
CO3	K4	18b.	How does UJT act as a relaxation oscillator?
CO4	K5	19a.	What are the two main components of the SCR's operational principle? Explain it with a neat diagram. <b>(OR)</b>
CO4	K5	19b.	Draw the operational diagram of a MOSFET and expound it.
CO5	K5	20a.	How does a phototransistor convert a light into an electrical signal? <b>(OR)</b>
CO5	K5	20b.	Explain the concept of a photodiode with a neat sketch.