Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APRIL/MAY 2024

ELECTRONICS AND COMMUNICATION ENGINEERING

II Semester

EC7201 - ELECTRONIC DEVICES

(Regulation 2015)

Time: 3hrs

Max.Marks: 100

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

Q. No	Questions	Marks
1	What is drift current?	2
2	In a common base connection, current amplification factor is 0.9. If the emitter current is 1mA, determine the value of base current.	2
3	Define, pinch-off voltage in JFET.	2
4	What is avalanche breakdown in MOSFET?	2
5	Draw the symbol of TRIAC and DIAC.	2
6	Write the working principle of LED.	2
7	List two applications of LDR.	2
8	Differentiate, MESFET and MOSFET.	2
9	Outline the uses of silicide layer.	2
10	What is metallization process?	2

PART- B (5 x 13 = 65 Marks)

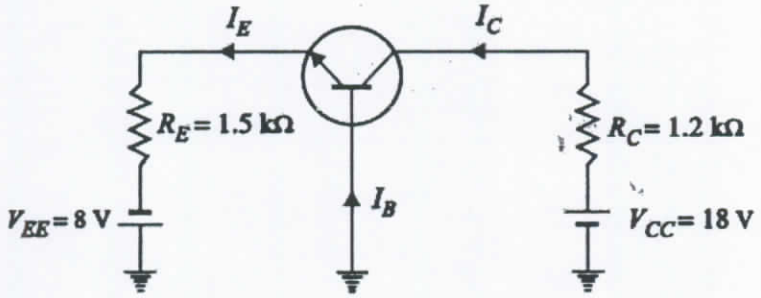
(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks
11 (a)	Describe the theory of PN junction and derive its diode current equation.	13
	(OR)	
11 (b)	Explain h-model and π-model in detail.	(7+6)
12 (a)	Explain the construction and working of enhancement MOSFET, with its characteristic graph.	13
	(OR)	
12 (b)	Explain the construction and operation of N-channel JFET, with its characteristic graph.	13

13 (a)	Describe the construction, working principle of SCR with its characteristic graph.	**13**
	(OR)	
13 (b)	Describe the construction, working principle of phototransistor and optocoupler.	**(7+6)**
14 (a)	Illustrate the construction and working principle of UJT. List out its applications.	**13**
	(OR)	
14 (b)	Illustrate the construction and working of Tunnel Diode with its characteristic graph.	**13**
15 (a)	Explain Doping techniques and Ion implantation process in detail.	**13**
	(OR)	
15 (b)	Explain Chemical Vapor Deposition and photolithography in IC fabrication process.	**13**

PART- C (1 x 15 = 15 Marks)

(Q.No. 16 is Compulsory)

Q. No	Questions	Marks
16	For the common base circuit shown, determine I_C and V_{CB}. Assume the transistor to be of silicon. 	**(8+7)**