Code No: R203104O **R20** SET - 1

III B. Tech I Semester Supplementary Examinations, July -2023
BASIC ELECTRONICS
(Common to EEE,ME,CSE,IT,CS,CSE(AI),CSE(AI&ML),CSE(DS),CSE(IOT))

Time: 3 hours Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks
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UNIT-I

1.	a)	Distinguish between conductors, semiconductors, insulators using energy band diagram.	[7M]
	b)	Explain the filtering action of a capacitor input filter.	[7M]
		(OR)	
2.	a)	Describe the behaviour of pn junction under Forward bias and reverse bias.	[7M]
	b)	Derive the expression for ripple factor and efficiency of a full wave rectifier.	[7M]

UNIT-II

3.	a)	Explain the working principle of tunnel diode.	[7M]
	b)	State and explain the applications of optical diodes.	[7M]
		(OR)	
4.	a)	Explain the applications of zener diode.	[7M]
	b)	Explain the structure, characteristics tunnel diode.	[7M]

UNIT-III

5.	a)	Draw and explain the input and output characteristics of a transistor in CE configuration.	[7M]
	b)	Describe how amplification achieved by a BJT	[7M]
		(OR)	
6.	a)	Explain the working of PNP transistor.	[7M]
	b)	Distinguish between the different types of transistor configurations with necessary circuit diagrams	[7M]

UNIT-IV

7.	a)	Describe the construction and explain the operation of depletion mode MOSFET. Also draw the static characteristics	[9M]
	b)	Compare P-channel JFET with N-channel JFET.	[5M]
		(OR)	
8.	a)	Explain the working of a P channel JFET and draw the V-I characteristics of it.	[9M]
	b)	Compare P-channel JFET with BJT.	[5M]

UNIT-V

9.	a)	Explain the two-transistor analogy of SCR.	[7M]
	b)	Write about photo transistor.	[7M]
		(OR)	
10.	a)	Draw the switching characteristics of SCR and explain.	[7M]
	b)	With neat circuit diagram explain the principle operation of UJT.	[7M]