

August 2023 (Supplementary Exam) B.Tech Program: Electronics and Telecommunication Examination: SY Semester: III Course Code: EXC303 and Course Name: Electronic Devices and Circuits Duration: 2.5 Hours Max. Marks: 60				
Instructions: (1) All questions are compulsory. (2) Draw neat diagrams wherever applicable. (3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight.	12		
i)	State and explain P-N junction diode characteristics.		2	
ii)	Draw circuit diagram of MOSFET circuit with voltage divider biasing.		2	
iii)	State different types of Multistage amplifiers.		4	
iv)	Sketch frequency response of CE amplifier and indicate low cut off frequency, high cut off frequency and bandwidth.		4	
v)	Draw circuit diagram of class B power amplifier.		4	
vi)	Define differential mode gain and CMRR for a differential amplifier.		2	
vii)	Explain miller effect?		4	
viii)	Sketch circuit diagram of two stage CS –CS amplifier.		6	
Q.2	Solve any four questions out of six.	16		
i)	Explain difference between silicon and germanium diode?		1	U
ii)	Explain concept of DC load in line for the amplifier.		3	U
iii)	Draw circuit diagram of CS MOSFET amplifier .Explain function of each component.		2	U
iv)	Draw circuit diagram of class AB amplifier with diode biasing and explain its operation?		6	U
v)	What are different biasing circuits used for BJT ?Draw circuit diagram and explain the operation of any one biasing circuit for BJT ?		3	

vi)	Draw and explain hybrid pi model of CE amplifier.		4	
Q.3	Solve any two questions out of three.		16	
i)	Compare voltage and power amplifiers.		4	
ii)	Draw the circuit diagram of basic MOSFET differential amplifier and explain its operation.		6	
iii)	Draw the circuit diagram and explain operation of two transistor current source. State its applications.		5	
Q.4	Solve any two questions out of three.		16	
i)	Draw circuit diagram and explain the operation of class A power amplifier.		4	
ii)	Draw circuit diagram of zener diode as voltage regulator and explain its operation.		2	
iii)	Determine low cut off frequency for the amplifier shown below... V CC =20 Volts, $\beta = 100$, $V_{BE} = 0.7$ Volts		2	
				
