K. J. Somaiya Institute of Technology, Sion, Mumbai-22 (Autonomous College Affiliated to University of Mumbai)

December 2023 B.Tech Program: Electronics and Telecomunication

Examination: SY Semester: III - Scheme TB

Course Code: EXC303 and Course Name: Electronic Devices and Circuits
Duration: 2.5 Hours Date: 4 12 2023 Max. Marks: 60

Instructions:

(1)All questions are compulsory.

(2)Draw neat diagrams wherever applicable.

(3)Assume suitable data, if necessary.

	(b) Z _o ,	Max. Marks	СО	BT level
Q 1	Solve any six questions out of eight.	12	/	1
i)	State and explain P-N junction diode characteristics.		1	U
ii)	Draw circuit diagram of FET circuit with voltage divider biasing.		2	U
iii)	State different types of Multistage amplifiers.	to the control of the	3	U
iv)	Sketch frequency response of CE amplifier and indicate low cut off frequency, high cut off frequency and bandwidth.	J.	4	U
v)	Draw circuit diagram of class B power amplifier.		5	U
vi)	Define differential mode gain and CMRR for a differential amplifier.		2	U
vii)	Explain miller effect?		4	U
viii)	Explain Crossover distortion.		6	U
Q.2	Solve any four questions out of six.	16		
)	Explain difference between silver and Germanium Diode.		1	U
i)	Explain concept of DC load in line for the amplifier.		3	U
ii)	Draw transfer characteristic for CS FET and Explain it.		2	U
v)	Draw circuit diagram of class A amplifier and explain its operation?		5	U
7)	What are different biasing circuits used for BJT ?Draw circuit diagram and explain the operation of any one biasing circuit for BJT ?		4	U
ri)	Draw and explain hybrid model of CE amplifer.		6	U
2.3	Solve any two questions out of three.	16		
	Compare voltage and power amplifiers.		4	U

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ii)	Draw the circuit diagram of basic MOSFET differential amplifier and		6	U
1)	explain its operation. Draw the circuit diagram and explain operation of two transistor current	263	5	U
ii)	source. State its applications.	16		
2.4	Solve any two questions out of three	13,000	377.3	
()	Draw circuit diagram and explain the operation of class AB power		3	U
,	amplifier. Draw circuit diagram of zener diode as voltage regulator and explain its	orfer since	1	U
ii)	operation		2	Apply
iii)	(a) Z_i . (b) Z_o .			
	$\begin{cases} \downarrow^{I_o} & \text{(c) } A_v. \end{cases}$	іжэнэ х	l yas	order -
	$\begin{cases} 330 \text{ k}\Omega \end{cases} $ 2.7 k Ω (d) A_i .	5.9 misle	and es	Sint
	V _o	Hatyaib	firenia	VETO L
	$h_{fe} = 120 Z_0$	at types to	e since	813
	$h_{ie} = 1.175 \text{ k}\Omega$ $h_{oe} = 20 \mu\text{A/V}$	ency ream	predictions	Skatel
	The state of the s	angaib	ii romo	BING!

Explain entire effects

(ii) Explain Cosserver distortion

(iii) Explain Cosserver distortion

(iv) Explain difference between effect and Communium Diode

(iii) Explain concept of DC food in time for the amplifier

(iii) Explain concept of DC food in time for the amplifier

(iii) Direction of account of alexa A amplifier and explain its operation?

(iv) What of difference between the BTT Ploese occut diagram and applied and of account diagram and applied and of account diagram and applied and of the amplifier.

(iv) Explain any two questions out of three.

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