

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

Feb/March 2024
 (B.Tech) Program: EXTC Scheme II

Examination: DSY Semester: III

Course Code: EXC303 and Course Name: Electronic Devices and Circuits

Date of Exam: 01/03/2024

Duration: 2.5 Hours

Max. Marks: 60

Supplementary Examination

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)	Define CMRR.	2	1	U
ii)	Explain input characteristics of CE mode.	2	1	U
iii)	Define the term Threshold Voltage for MOSFET.	2	2	U
iv)	Draw and explain forward characteristics of Forward biased diode.	2	4	U
v)	Write down the drain current equation for N-Channel Enhancement MOSFET for Linear and Saturation region.	2	6	U
vi)	Draw symbol of E-MosFet and D- MosFet	2	4	U
vii)	If a transistor has beta 100, base current is 50 microampere then find emitter current and collector current.	2	3	U
viii)	Define CMRR.	2	3	Ap
Q.2	Solve any four questions out of six.	16		
i)	Derive expression for A_v for CE amplifier with Load.	4	4	Ap

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ii)	Explain any one ac model of BJT.	4	5	U
iii)	What is biasing? Explain the need of biasing.	4	4	U
iv)	Draw biasing circuits diagram for Mosfet amplifier (any two).	4	6	U
v)	Differentiate between Class B and Class AB amplifier.	4	4	Ap
vi)	Explain transfer characteristic of N- channel MOSFET	4	3	U
Q.3	Solve any two questions out of three.	16		
i)	Explain characteristic of Zener diode, and one application.	8	1	U
ii)	Explain High frequency model of BJT.	8	3	U
iii)	Explain working of class A power amplifier.	8	5	U
Q.4	Solve any two questions out of three.	16		
i)	Derive the expression for A_v , R_i , and R_o for Common Source amplifier.	8	4	U
ii)	Derive for Q points of N channel MOSFET voltage divider circuit.	8	5	Ap
iii)	Derive the expression of CMRR for differential amplifier using E-MOSFET.	8	6	U
