II B

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

Jan-Feb 2026
~~Nov – Dec 2025~~

(B. Tech) Program: EXTC   Scheme : ~~III~~ II B
Regular/Supplementary Examination: SY   Semester: III
Course Code: EXE303   and Course Name: Electronic Devices and ~~Linear~~ Circuits

Date of Exam: ~~2/12/2025~~ 5/02/26   Duration: 02.5 Hours   Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q.N	Question	Max	CO	BT level
Q 1	Solve any **two** questions out of three: (05 marks each)	10		
a)	Explain the working principle of a Zener diode in reverse bias.		1	U
b)	Explain the fixed bias circuit with a neat diagram.		2	U
c)	List any four differences between BJT and MOSFET.		3	U
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Illustrate the concept of cascading with a neat block diagram of a multistage amplifier.		4	U
b)	Describe how Miller capacitance affects the input impedance of an amplifier.		5	U
c)	Explain the operation of Class A, B, AB, and C power amplifiers.		6	U
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Explain the working of D-MOSFET in depletion and enhancement modes.		1	U
b)	Explain how the coupling capacitor affects the low-frequency response of a CE amplifier		3	U
c)	Draw the high-frequency small-signal model for CS amplifier.		4	U
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Explain the working of Class B push-pull amplifier.		6	U
b)	Define differential gain and common-mode gain of a differential amplifier. What is CMRR?		5	U
c)	Explain Differential amplifier with MOSFET.		2	U

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