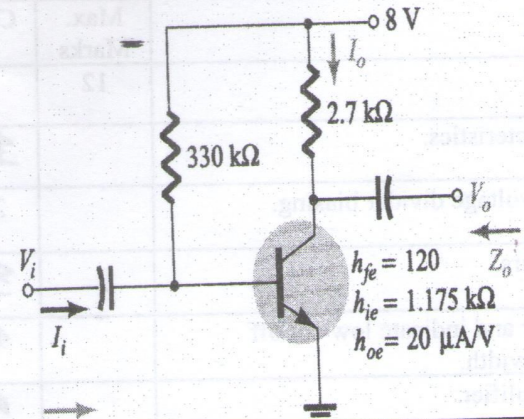


**K. J. Somaiya Institute of Technology, Sion, Mumbai-22**  
(Autonomous College Affiliated to University of Mumbai)

December 2023				
B.Tech Program: Electronics and Telecommunication				
Examination: SY Semester: III - <i>Scheme II B</i>				
Course Code: EXC303 and Course Name: <b>Electronic Devices and Circuits</b>				
Duration: 2.5 Hours		<i>Date: 4/12/2023</i>		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	<b>Solve any six questions out of eight.</b>	12		
i)	State and explain P-N junction diode characteristics.		<i>1</i>	U
ii)	Draw circuit diagram of FET circuit with voltage divider biasing.		2	U
iii)	State different types of Multistage amplifiers.		<i>3</i>	U
iv)	Sketch frequency response of CE amplifier and indicate low cut off frequency, high cut off frequency and bandwidth.		4	U
v)	Draw circuit diagram of class B power amplifier.		<i>5</i>	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	<b>Solve any four questions out of six.</b>	16		
i)	Explain difference between silver and Germanium Diode .		1	U
ii)	Explain concept of DC load in line for the amplifier.		3	U
iii)	Draw transfer characteristic for CS FET and Explain it.		2	U
iv)	Draw circuit diagram of class A amplifier and explain its operation?		<i>5</i>	U
v)	What are different biasing circuits used for BJT ? Draw circuit diagram and explain the operation of any one biasing circuit for BJT ?		<i>4</i>	U
vi)	Draw and explain hybrid model of CE amplifier.		<i>6</i>	U
Q.3	<b>Solve any two questions out of three.</b>	16		
i)	Compare voltage and power amplifiers.		4	U

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ii)	Draw the circuit diagram of basic MOSFET differential amplifier and explain its operation.		6	U
iii)	Draw the circuit diagram and explain operation of two transistor current source. State its applications.		5	U
Q.4	Solve any two questions out of three		16	
i)	Draw circuit diagram and explain the operation of class AB power amplifier.		3	U
ii)	Draw circuit diagram of zener diode as voltage regulator and explain its operation.		4	U
iii)	 <p>(a) <math>Z_i</math>.                  (b) <math>Z_o</math>.                  (c) <math>A_v</math>.                  (d) <math>A_i</math>.</p>		2	Apply

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