Course Name: B.Sc. in Computer Science
Semester – II, Session: 2019-2021
Department of Computer Science
Asutosh College, University of Calcutta
92, S. P. Mukherjee Road, Kolkata – 700026

Name of Faculty: Gautam Mahapatra, Associate Professor

Subject: Basic Electronics and Circuit Theory

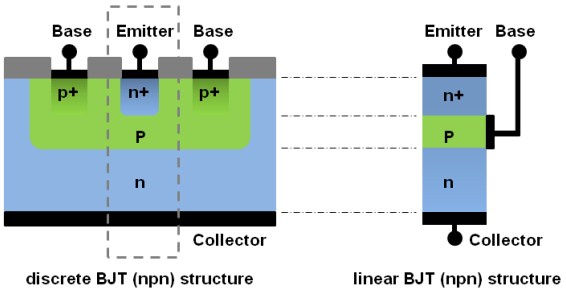
Class Taken:
Date: 15th April 2020, Time: 10.00AM – 12.00Noon

Software used: Zoom

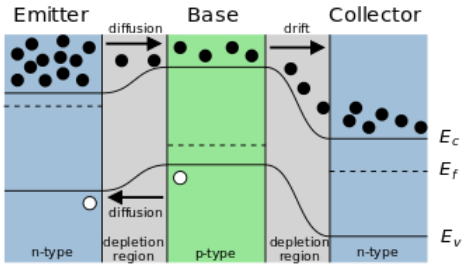
Details of the subject taught: Introduction to Transistor

Electronic Transistors

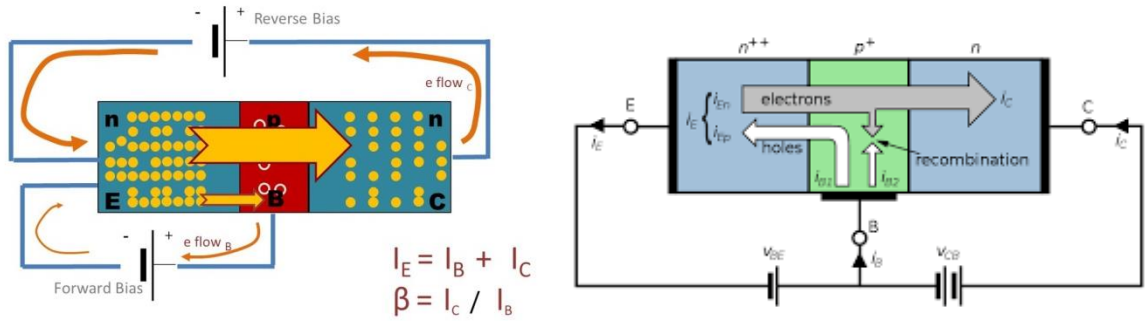
Construction of Transistors:



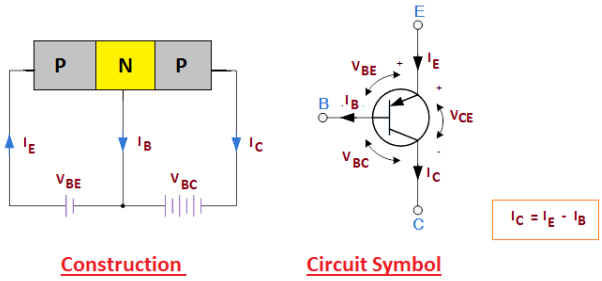
Flow of charge carriers to develop the different current components



Different Current Components for the transistor in operation

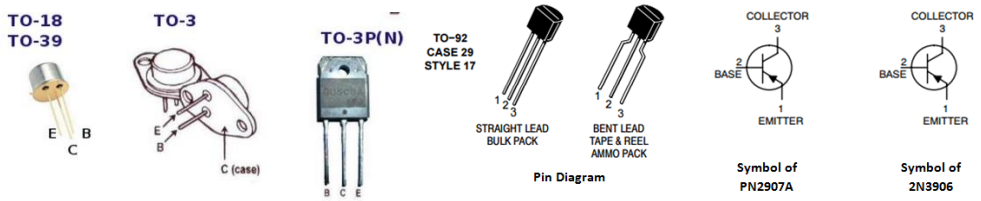


Symbols and Equivalents:

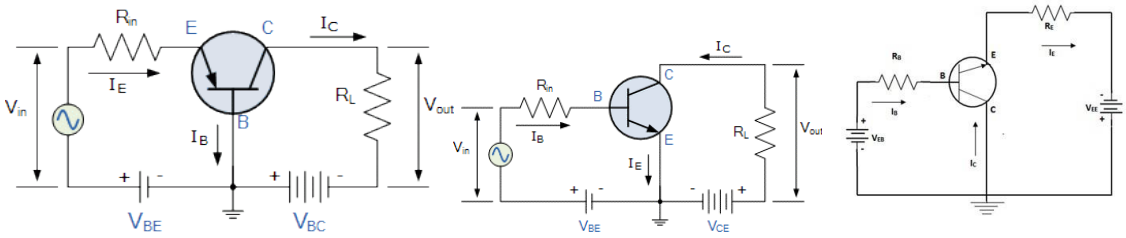


Construction Circuit Symbol

Physical forms for Practical Applications / uses:



Mode of Configurations for the Transistors: (CB,CE and CC)



Experimental Setups:

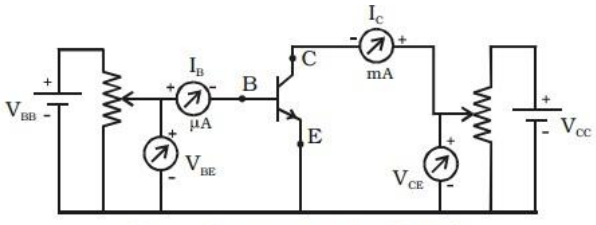


Fig Transistor circuit in CE mode.

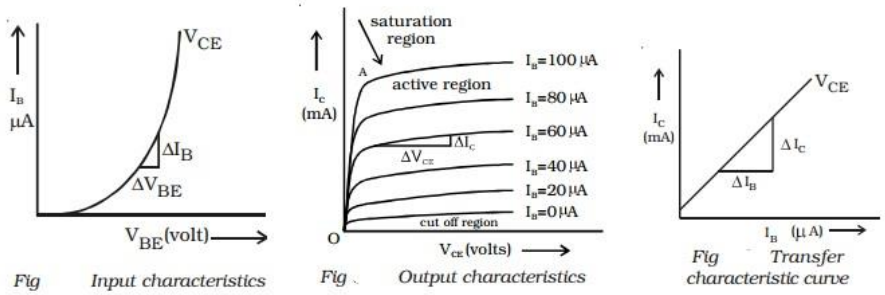
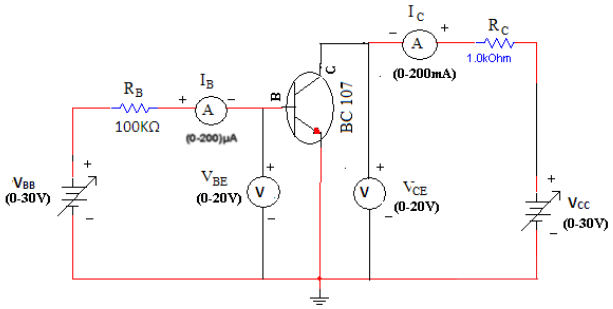
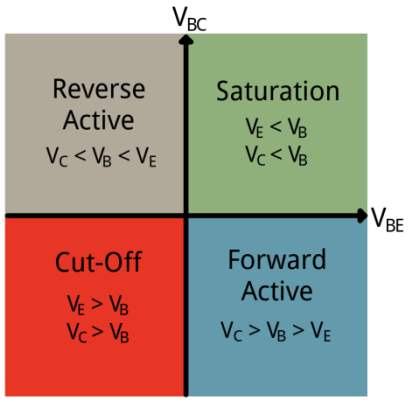


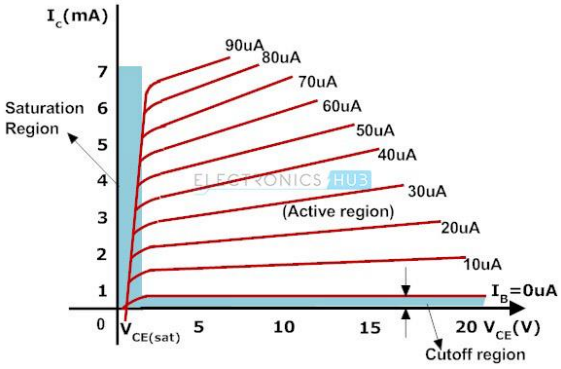
Fig Input characteristics *Fig Output characteristics* *Fig Transfer characteristic curve*

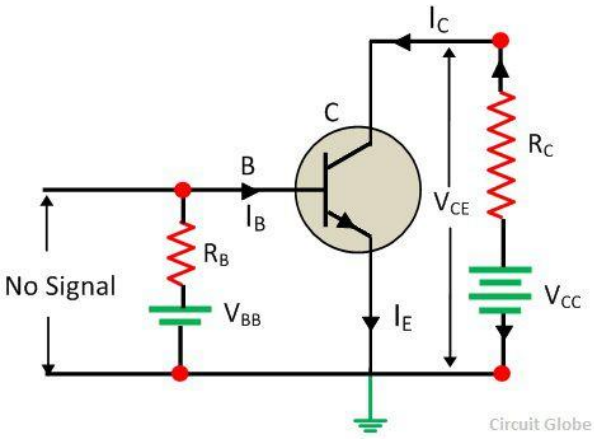


Applied voltages	B-E junction bias (NPN)	B-C junction bias (NPN)	Mode (NPN)
E < B < C	Forward	Reverse	Forward-active
E < B > C	Forward	Forward	Saturation
E > B < C	Reverse	Reverse	Cut-off
E > B > C	Reverse	Forward	Reverse-active
Applied voltages	**B-E junction bias (PNP)**	**B-C junction bias (PNP)**	**Mode (PNP)**
E < B < C	Reverse	Forward	Reverse-active
E < B > C	Reverse	Reverse	Cut-off
E > B < C	Forward	Forward	Saturation
E > B > C	Forward	Reverse	Forward-active

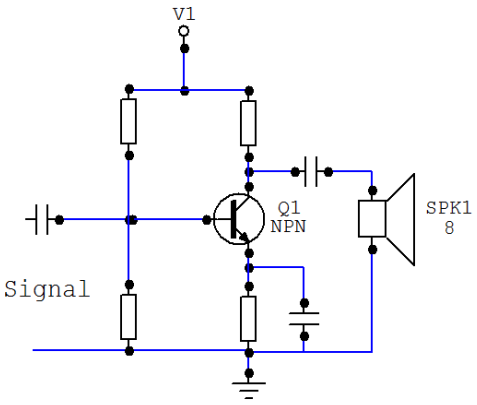


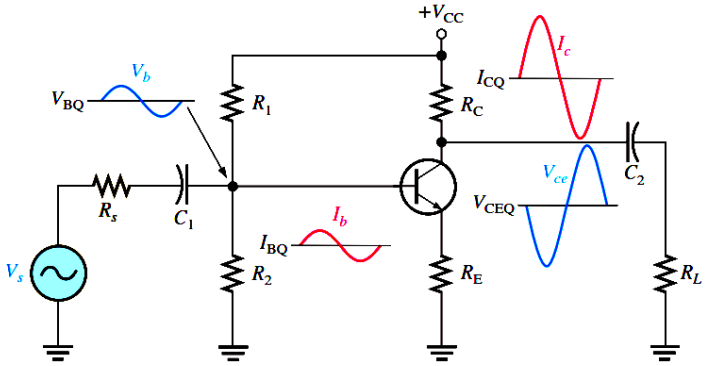
Operating regions of a Transistor:

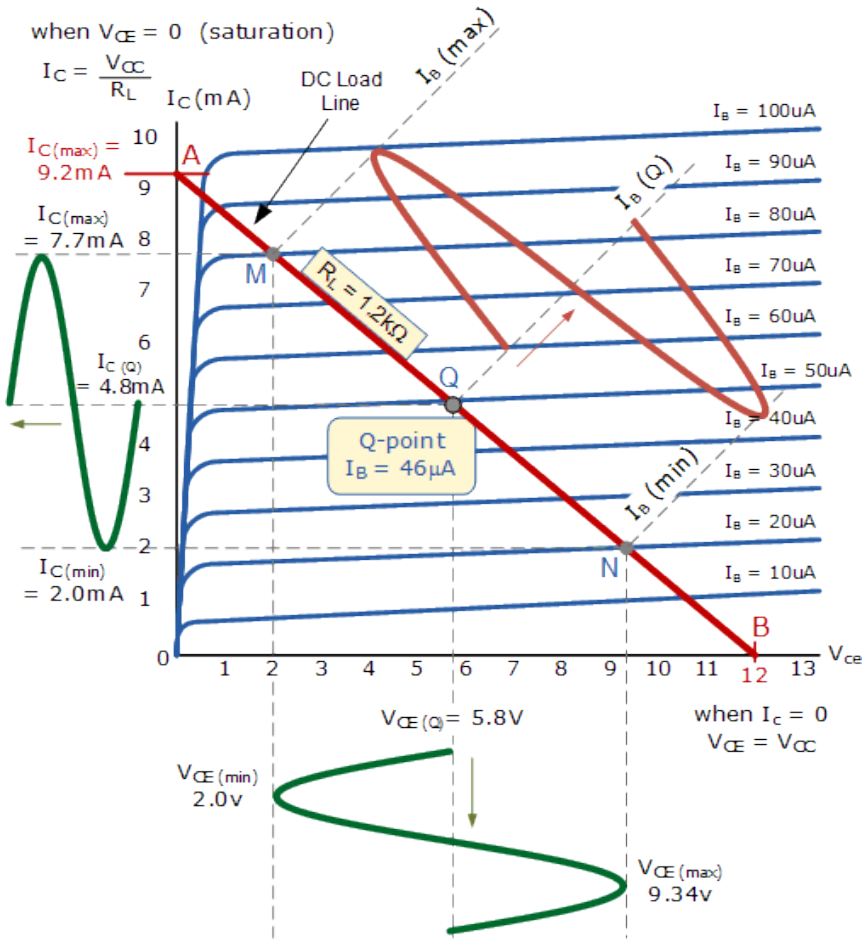




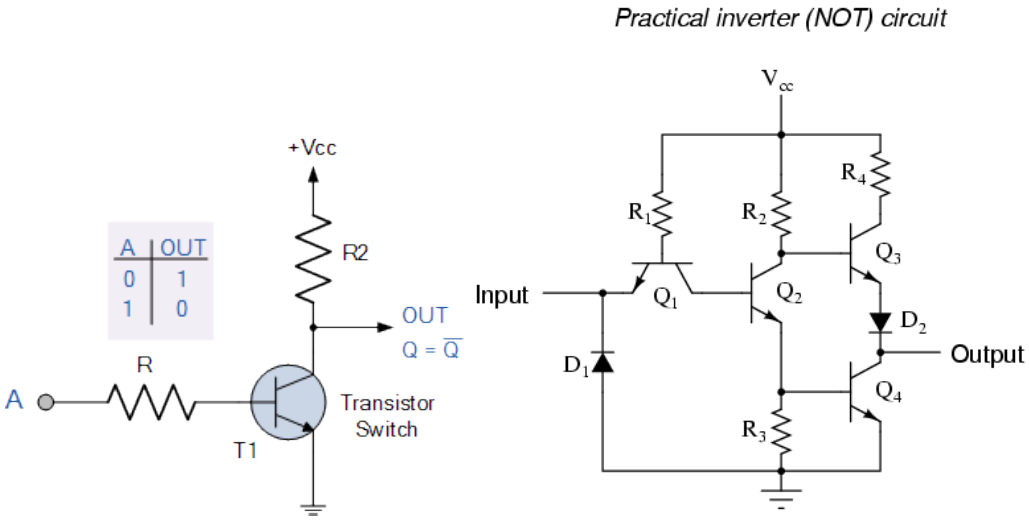
Transistor as an Amplifier:







Transistor as an Inverter / NOT gate:



Next Topic to Teach:

Biasing of Transistor in the Amplification Circuits: