Enroll. No. _____

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

ADITYA SILVER OAK INSTITUTE OF TECHNOLOGY

BE - SEMESTER–II • MID SEMESTER-II EXAMINATION – SUMMER 2019

SUBJECT: Basic Electronics (3110016) (EE/CE/IT/EC)

DATE: 26-04-2019 TIME: 10:30 am to 12:00 pm TOTAL MARKS:40

Instructions: 1.Q. 1 is compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1*	(a)	Why BJT is called Current Controlled device and FET is Voltage Controlled?	[03]
	(b)	Derive the relation between α and β.	[03]
	(c)	Compare CB, CC and CE Configurations.	[04]
Q.2	(a)	Draw and explain Input - Output characteristics of CE transistor configuration.	[06]
	(b)	Draw structure of n-channel JFET and explain its working.	[05]
	(c)	Draw circuit of transistor as a switch and explain its applications.	[04]

OR

Q.2	(a)	List the Biasing methods of transistor. Draw and explain the circuit of voltage divider biasing.	[06]
	(b)	Draw drain characteristics & Transfer Characteristics of JFET with neat diagram	[05]
	(c)	Explain DC load line and locate coordinates of Q-point for any transistor configuration.	[04]
Q.3	(a)	Describe briefly construction and working of n channel Depletion type MOSFET.	[06]
	(b)	State the three regions of BJT and explain construction characteristics of each region	[05]
	(c)	Explain the basic principles of operation of LED and Photodiode.	[04]

OR

Q.3 (a) A Transistor is connected in CE configuration in which collector supply is 8 V, and the voltage drop across resistance in R_C connected in collector circuit is 0.5 V. The value of R_C is 800 Ω, if $\alpha = 0.96$, [06]

Determine : a) V_{CE} b) I_B c) β

(b) Describe briefly construction & working of n-channel Enhancement type MOSFET. [05]

(c) Write Short Note on Varactor diode. [04]