JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, February/March - 2016
ELECTRONIC DEVICES AND CIRCUITS
(Common to EEE, ECE, CSE, EIE, IT, MCT, ETM)

Time: 3 hours   Max. Marks: 75

Answer any five questions
All questions carry equal marks

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1.a) Draw the energy band diagram of a PN junction and explain the working of a Diode.

b) Describe the piecewise linear approximation model of a diode.   [9+6]

2.a) With a neat diagram and wave forms explain the working of a Full Wave Rectifier.

b) Explain how Zener Diode can be used as Voltage Regulator.   [8+7]

3.a) Explain the current components of NPN Transistor when it is operated in action region.

b) Explain the input and output characteristics of a transistor in CB configuration.
[7+8]

4.a) Discuss the terms Thermal Runaway and Thermal Stability?

b) Explain how do you draw D.C and A.C load lines for amplifier circuit?   [6+9]

5.a) Justify the validity of approximate hybrid model of a transistor applicable in low frequency range.

b) Draw the circuit diagram of CC amplifier and explain its working.   [7+8]

6 a) With the help of neat sketches and characteristic curves explain the operation of the junction FET.

b) Explain the construction of MOSFET.   [7+8]

7.a) Draw the circuit diagram of CS amplifier and explain its working.

b) Compare FET with BJT.   [9+6]

8.a) Draw the two transistor model of an SCR and explain its breakdown operation.

b) Explain the principle behind the Varactor diode and list out its application.   [8+7]

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