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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 Answer any five questions

1500

Max. Marks: 75

All questions carry equal marks

| MIN. | ESIC.F | | |
|------------------------------|---------------------|---|-----|
| | 1.a) | Draw the energy band diagram of a PN junction and explain the working of a | à . |
| | 1.) | Diode. Describe the piecewice linear empreyimation model of a diode. | 1 |
| SALE IN | b) | Describe the piecewise linear approximation model of a diode. [9+6] | j |
| • | 2.a) | With a neat diagram and wave forms explain the working of a Full Wave Rectifier. | 3 |
| | þ) | 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 | i |
| | | region. | |
| ATTEN AFT A | b): | Explain the input and output characteristics of a transistor in CB configuration. | |
| | 4 | [7+8] | 1 |
| | 4.a) | Discuss the terms Thermal Runayay and Thermal Stability? | |
| KOJ Vel | 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 | r |
| | | frequency range. | |
| | b) _i | 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 | • |
| e jane k | .Auro | the junction FET. | |
| | b) | Explain the construction of MOSFET. [748] | |
| | 7.a) | Draw the circuit diagram of CS amplifier and explain its working. | |
| 182a 182a 183a 183a | b) | Compare FET with BJT. [946] | |
| | 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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