

B.E./B.TECH (FULL TIME) DEGREE ARREAR EXAMINATIONS, APRIL / MAY 2011  
(COMMON TO MECHANICAL, MANUFACTURING, INDUSTRIAL, PRINTING)  
SECOND SEMESTER  
(REGULATIONS 2004)  
EC 192 ELECTRONICS ENGINEERING

37

Time: 3 Hours

Max.marks: 100

Answer ALL questions

PART-A (10 x 2 = 20 marks)

1. How do you classify solids based on energy band theory?
2. What is meant by Zener Break down?
3. Draw the circuit representation of PNP transistor.
4. Define: "Early Effect".
5. What are the differences between Field Effect Transistor and Bipolar Junction Transistor?
6. What are the advantages of degenerative feedback amplifier?
7. Define: "Nyquist criterion".
8. What is meant by common-mode Rejection Ratio?
9. Construct Exclusive OR gates using NAND gate.
10. State the De-Morgan's Theorem and prove using truth table.

PART-B (5 x 16 = 80 marks)

11. Explain the VI characteristics of PN junction diode.
  - 12.(a) Draw the CB configuration of a p-n-p transistor and explain its input and output characteristics.  
OR
  - 12.(b) Draw the Ebers-Moll Model for a p-n-p transistor and explain various aspects of it.
  - 13.(a) Explain the basic structure of an n-channel field-effect transistor.  
OR
  - 13.(b) Explain the low-frequency small signal FET Model.
  - 14.(a) Explain the Frequency Response of the voltage shunt feedback amplifier.  
OR
  - 14.(b) Explain the operations of Transistor phase-shift oscillator.
  - 15.(a) Construct the full adder circuit and explain its operations.  
OR
  - 15.(b) Construct the Serial Adder and explain its operations.
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