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**B.E. Degree (Full Time) Examination: May 2011**  
(Mechanical, Material Science, Industrial, Manufacturing Engineering and Printing Technology)  
**Second Semester**

**EC 9169 - ELECTRONICS ENGINEERING**

**Time: 3 Hours**

**Max. Marks: 100**

**Answer ALL Questions**

**PART - A (10 x 2 = 20 Marks)**

1. Define: "Conductor", "Insulator" and "Semi-conductor".
2. What is meant by "Zener Effect"?
3. Draw the circuit representation of two types PN junction transistor.
4. What is the advantage of Negative Feedback?
5. Write any two differences between BJT and FET.
6. Draw the circuit symbol of "SCR".
7. Draw the basic configuration of Oscillator Circuit.
8. What are the characteristics of an Ideal Operational Amplifier?
9. Draw the Logic symbol and truth table for "OR" and "AND" Gates.
10. Define: "Multiplexer". Draw the block diagram of 4 to 1 Multiplexer.

**PART - B (5 x 16 = 80 Marks)**

11. What is meant by "Rectifier"? Explain how the PN Junction Diode used in the Half Wave and Full Wave Rectifier with neat diagram.
  - 12.(a) Draw the neat diagram of transistor CE configuration and explain its Input and Output characteristics.  

**OR**
  - 12.(b) What is meant by Feedback Amplifier? Explain the concept of feedback amplifier with necessary diagram.
  - 13.(a) Explain the structure, operation and characteristics of n-channel Field Effect Transistor.  

**OR**
  - 13.(b) What is "SCR"? Explain the Volt-Ampere characteristics of SCR.
  - 14.(a) Explain the principles of Oscillator Circuit.  

**OR**
  - 14.(b) Explain the Operation of Inverting and Non-Inverting Operational Amplifiers.
  - 15.(a) Construct the full-adder circuit using half-adder circuits and explain its operations.  

**OR**
  - 15.(b) Construct 3 to 8 line decoder and explain its operations.
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