

**B.E DEGREE EXAM NOV/DEC 2012**  
**EC 9168 BASIC ELECTRONICS ENGINEERING**  
**II SEMSTER GEO INFORMATICS(R2008)**  
**ANSWER ALL QUESTIONS**

**DURATION: 3 HRS**

**MAX MARKS:100**

**PART A( 10X2=20 )**

1. Distinguish:Extrinsic and intrinsic semiconductors.
2. Define ripple factor? What is its value for a half wave and a full wave rectifier?
3. Specify the need for a biasing circuit in amplifiers
4. Which transistor configuration can be used as a voltage follower?
5. Give the applications of TRIAC and DIAC
6. What is meant by holding current in SCR operation
7. Specify the characteristics of an ideal Operational Amplifier
8. State the merits and Demerits of Negative feedback
9. Simplify the given Boolean Expression  
$$F(x, y, z) = x'y'z + xy'z + xyz' + x'y'z'$$
10. Differentiate combinational and sequential logic

**PART B**

**5X16=80 MARKS**

11. With circuit diagram explain the working of PN junction diode and explain its VI characteristics
- 12a). Draw CE, CB configurations with appropriate current directions for an NPN transistor. Derive the expression for the current amplification factor for each configuration and obtain their interrelationship.  
(OR)
- 12b). Explain the working of Bridge rectifier with suitable waveforms
- 13a).i) Explain the working of a tank circuit in an oscillator (6)  
ii) Explain the construction and working of JFET (10)  
(OR)
- 13b) i ) Discuss the importance of power electronic Devices (4)  
ii) Explain the construction and working of unijunction transistor .Explain how it can be used as an oscillator (12)
- 14a) Explain the working of a transistor Monostable multivibrator  
(OR)
- 14b) Explain the circuit operation of a RC phase shift oscillator and give the formula for its frequency of operation
- 15a).i) Design and implement a full adder with minimum number of gates (10)  
ii) State and prove DeMorgans laws (6)  
(OR)
- 15b). Explain in detail the working of any one Analog to Digital convertor