

B.E./B.TECH (FULL TIME) DEGREE ARREAR EXAMINATIONS, NOVEMBER/DECEMBER 2012
INFORMATION TECHNOLOGY BRANCH
FOURTH SEMESTER REGULATIONS: R-2008
EC 9161 – ELECTRONIC DEVICES AND CIRCUITS

Time: 3 Hours

Answer ALL Questions

Max.Marks: 100

Part-A (10x2=20 Marks)

1. Define paths and branches?
2. What is meant by single loop circuit?
3. Define power factors.
4. State Linearity and super position theorem?
5. Distinguish clearly the difference between JFET and MOSFET?
6. What is zener break down?
7. Mention the impact of capacitor input filter?
8. What is choke input filter?
9. Give the ideal characteristics of an operational amplifier.
10. Draw the circuit diagram of an summing amplifier?

Part-B (5x16=80 Marks)

11. Explain in detail about resistors in series and parallel voltage and current division with suitable examples. (16)
- 12.(a)(i) State and explain Thevenin and Norton equivalent theorem with suitable-circuit. (8)
(ii) Describe the functions involved in Delta-Wye conversion. (8)

OR

- 12.(b)(i) Describe the concept and importance of phasor diagrams in circuit analysis. (12)
(ii) State and explain maximum power transfer theorem. (4)
- 13.(a)(i) Derive the PN diode current equation. (10)
(ii) Distinguish clearly the difference between drift current and diffusion current? (6)

OR

- 13.(b) What is the use of Ebers-Moll equation? Using the Ebers-Moll equation derive the current gain of a transistor with neat sketch. (16)

14.(a) What is meant by Rectifier? Mention the applications of FWR? and also derive the expressions with neat sketches. (16)

OR

14.(b) Discuss about the CS MOSFET amplifier with neat sketches? (16)

15.(a) Write short notes about the following:

- (i) First order Low Pass filter (8)
- (ii) First order High Pass filter (8)

OR

15.(b) Write short notes about the following:

- (i) Subtractor (8)
 - (ii) Digital to Analogue convertor. (8)
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