

Roll No.

B.E./B.TECH (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2011
ELECTRICAL AND ELECTRONICS ENGINEERING BRANCH

THIRD SEMESTER
(REGULATION 2008)

EC 9215 – ELECTRON DEVICES AND CIRCUITS

Time: 3 Hours

Max.Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. Write the applications of laser diode.
2. Define zener breakdown.
3. List the high frequency limitations of bipolar devices.
4. What are the types of MOSFET?
5. What do you mean by biasing?
6. Draw the circuit diagram for MOSFET small signal model.
7. Draw the circuit diagram of single tuned amplifier.
8. Draw the equivalent circuit of a pentode stage with a cathode impedance.
9. List the merits of negative feedback.
10. Draw the electrical model of a piezoelectric crystal.

PART-B (5X16=80 Marks)

11. (i) Prove that a PN junction diode reverse biased can be used as a variable capacitor. (8)
(ii) Describe the formation of depletion region in a PN junction diode. (8)
- 12.(a)(i) Explain the various biasing circuits of BJT. (8)
(ii) Determine the h-parameters from the characteristics of CE configuration. (8)
OR
- 12.(b) Explain the structure, operation and V-I characteristics of JFET. (16)
- 13.(a) Draw the circuit diagram of a CS amplifier at high frequencies and derive the expression for voltage gain, input admittance and output admittance. (16)
OR
- 13.(b) Explain the frequency response of CE, CB and CC amplifiers. (16)
- 14.(a) With neat circuit diagrams explain an infinite cascade of CE stages. (16)
OR
- 14.(b) With mathematical substantiation explain the common mode and difference mode of differential amplifier. (16)
- 15.(a) With suitable circuit diagram derive the equations for voltage gain, output resistance and input resistance of an amplifier with current series negative feedback. (16)
OR
- 15.(b) Explain the principle of Wien bridge oscillator and Hartley oscillator. (16)
