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Question Paper Code : 21393

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Third Semester

Electrical and Electronics Engineering

EE 2203/EE 35/10133 EE 305 A/080280018 — ELECTRONIC DEVICES AND
CIRCUITS

(Regulation 2008/2010)

(Common to B.E. (Part-Time) Second Semester Electrical and Electronics
Engineering and Computer Science and Engineering – Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define static and dynamic resistance of a PN diode.
2. What is LED? Draw its symbol.
3. Draw the circuit of NPN transistor in CB configuration.
4. What are power transistors? List its applications.
5. Define the Pinch – off voltage of JFET.
6. What is MOSFET? Name its types.
7. Name the types of feedback amplifiers.
8. State Piezo – electric effect.
9. What is a clamper? Name its types.
10. How is a Schmitt trigger different from a multivibrator?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the effect of temperature of a diode. (8)
(ii) Discuss about Drift and diffusion currents of PN diode. (8)
- Or
- (b) (i) Discuss about zener shunt voltage regulator. (8)
(ii) Explain the construction and working of LCD with its characteristics. (8)

12. (a) Draw the circuit of NPN transistor CE configuration and describe the static input and output characteristics. (16)

Or

- (b) (i) Obtain the hybrid model of CE transistor and define the hybrid parameters. (8)
(ii) Discuss about opto couplers. (8)
13. (a) Draw the small signal equivalent circuit of FET amplifier in CS connection and derive the equations for voltage gain, input impedance and output impedance. (16)

Or

- (b) With the help of suitable diagrams, explain the working of N – channel enhancement MOSFET. (16)
14. (a) Draw the circuit diagram of an emitter, coupled BJT differential amplifier and derive expressions for differential gain, common mode gain, CMRR, input impedance and output impedance. (16)

Or

- (b) Draw the circuit of Hartley Oscillator and explain its working. Derive the expressions for frequency of oscillation and condition for starting of oscillation. (16)
15. (a) Explain the different types of clippers with neat circuit and waveforms. Also list its applications. (16)

Or

- (b) Draw the circuit diagram and explain the working of UJT relaxation oscillator with necessary waveforms. Also derive the expression for frequency of oscillation. (16)
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