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Question Paper Code: 21012

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2014.

Second Semester

Electronics and Instrumentation Engineering

01UEI207 - ELECTRONIC DEVICES AND CIRCUITS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define Doping.
2. Define cutoff and active region of a transistor.
3. Write Shockley's equation.
4. What is the major difference in construction of the D-MOSFET and the E-MOSFET?
5. Why do we choose q point at the center of the load line?
6. What is biasing?
7. What is sustained oscillation?
8. What is feedback amplifier?
9. Draw a practical Clamper circuit.
10. What is UJT?

PART - B (5 x 16 = 80 Marks)

11. (a) Explain the operation of forward biased and reverse biased PN junction Diode. (16)

Or

(b) Draw and explain the input and output characteristics of a transistor in CE configuration. (16)

12. (a) Explain the working of a P channel JFET and draw the V-I characteristics of it. (16)

Or

(b) Explain the working of a N-channel depletion-mode MOSFET. (16)

13. (a) Design an amplifier with CE configuration and analyze its characteristics. (16)

Or

(b) Explain complementary symmetry power amplifier with neat circuit diagram. (16)

14. (a) Draw the circuit diagram of a current series feedback amplifier and derive expressions for voltage gain with feedback. (16)

Or

(b) Explain the working of Colpitt's oscillator and derive an expression for frequency of oscillation for Colpitt's oscillator. (16)

15. (a) With a neat sketch, explain the working of an astable multivibrator. (16)

Or

(b) Explain the working principle of switched mode power supplies. (16)

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