

H 1229

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Second Semester

Metallurgical Engineering

EC 152 --- ELECTRONICS ENGINEERING

(Common to B.E. Mechanical/Chemical/Fashion/Industrial
Bio-Tech/Leather/Polymer/Textile Chemistry/Textile Technology)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A --- (10 × 2 = 20 marks)

1. Give the energy band description of semiconductors.
2. Define peak inverse voltage of a diode.
3. What is meant by transistor biasing?
4. Define 'Bandwidth' of an amplifier.
5. Specify the advantages of negative feedback in amplifiers.
6. Define :
 - (a) Breakover Voltage.
 - (b) Holding Current with regard to SCR.
7. What are the applications of monostable multivibrator?
8. How the voltage gain is controlled in an OP-AMP?
9. State De Morgans Theorem.
10. Draw the logic symbol and write the truth table of EX-OR gate.

PART B — (5 × 16 = 80 marks)

11. (i) Outline the principle of working of Tuned amplifiers. (4)
- (ii) Draw the input and output characteristics of Common Base and Common Emitter Connection and explain. (8)
- (iii) Obtain the relation between current amplification factor (α) in common base configuration and current amplification factor (β) in common emitter configuration. (4)

12. (a) Explain, with suitable circuit diagrams and waveforms, the working of a full wave Bridge rectifier. (16)

Or

- (b) With neat diagrams, explain in detail the Volt-Ampere characteristics of PN junction diode. (16)

13. (a) Discuss the construction and working of UNI JUNCTION TRANSISTOR. Define Intrinsic Standoff Ratio. (16)

Or

- (b) Give the constructional details and explain the working principles of FET. (16)

14. (a) (i) Discuss with neat diagram the operation of a Wien bridge oscillator. (12)
(ii) What are the limitations of LC and RC oscillators? (4)

Or

- (b) Describe the step by step procedure of fabrication of Integrated circuits. (16)

15. (a) (i) Design and implement a full adder with minimum number of gates. (13)
(ii) Bring out the difference between sequential logic and combinational logic. (3)

Or

- (b) Draw a neat diagram of a decade counter and explain the working of the decade counter with suitable waveforms and truth table. (16)

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