L 1089

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

Second Semester

Polymer Technology

EE 1163 — ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Bio–Technology)

(Regulations 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Kirchoff's current law and voltage law.

2. Mention the importance of power factor.

3. What are the characteristics of motors?

4. Compare moving coil and moving iron instruments based on any two salient features.

5. How are solids classified based on energy band theory?

6. Mention the significance of voltage regulation.

7. Distinguish between intrinsic and extrinsic semiconductors.

8. Draw the characteristics of CB transistor configuration.

9. How is an amplifier classified as Class C amplifier?

10. Draw the circuit diagram of an OP–AMP based integrator.

PART B — (5 × 16 = 80 marks)

11. (i) Explain briefly about three phase balanced circuits. (6)

(ii) Describe the operating principle of dynamometer type wattmeter with a neat circuit diagram. (10)

12. (a) Describe about the starting and speed control schemes of dc shunt motor. (8 + 8)

Or

(b) (i) Describe the operation of a three phase induction motor. (8)

(ii) Brief about the methods of excitation of DC generator. (8)

13. (a) What are rectifiers? How can they be implemented as electronic circuits? Explain the circuits in brief. (3 + 3 + 10)

Or

(b) Describe the VI characteristics of :

(i) PN junction diode.

(ii) Zener diode. (8 + 8)

14. (a) Describe the principles of Class A power amplifier with a neat circuit diagram. (16)

Or

(b) Draw the circuit diagram of a single tuned amplifier and explain its operation. (16)

15. (a) Draw the circuit diagram of a Wien bridge oscillator and explain its operation. (8 + 8)

Or

(b) With neat diagrams, explain the operation of OP–AMP based adder and multiplier. (8 + 8)
