

Reg. No. :

T 3913

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

Annual Pattern — First Year

(Regulation 2004)

Aeronautical Engineering

EE 1X 02 — BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Automobile Engineering/Marine Engineering/Mechanical Engineering
and Production Engineering)

Time : Three hours

Maximum : 100 marks

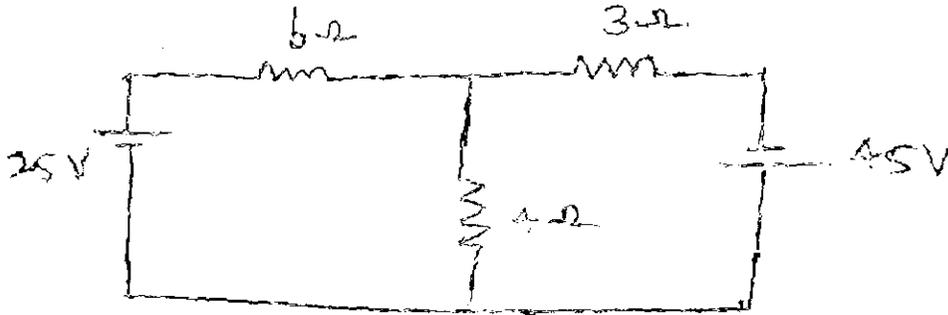
Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Kirchoff's laws.
2. What do you mean by power factor?
3. Define voltage regulation.
4. Draw the speed torque characteristics of a DC shunt motor.
5. Single phase induction motor is not self starting. Why?
6. Write the equation for induced emf for an alternator.
7. What do you mean by a transducer?
8. Explain LDR.
9. What is packet loss?
10. Write briefly on principle of total internal reflection used in fibre optics.

PART B — (5 × 16 = 80 marks)

11. (a) Using Kirchoff's laws, find the current in various resistors in the circuit shown below.



Or

- (b) Name the instrument used for measuring the electrical power consumed during a specific period. Discuss its principle of operation with suitable diagram.
12. (a) With a neat sketch, describe the principle of operation of DC motor.

Or

- (b) Discuss the principle of operation of single phase transformer. Draw its equivalent circuit also.
13. (a) Describe the various methods of starting of a single phase induction motor.

Or

- (b) Explain the principle of operation of alternator with its constructional features.
14. (a) Describe the construction and characteristics of JFET.

Or

- (b) Explain the operating principles of half and full wave rectifiers.

15. (a) What is modulation? With neat diagrams explain the different types of modulations.

Or

- (b) With a neat diagram, explain principle of operation of mobile phones, for signal transmission and reception.
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