Reg. No. : | | | | | | | | | | |

Question Paper Code: 92326

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2024

Second Semester

Civil Engineering

19UEE226- BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to ALL Engineering)

(Regulation 2019)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. What are the limitations of ohm's law?
2. Define the principle of moving iron instrument for attraction type.
3. What is meant by transformation ratio?
4. List out the type of single phase induction motors?
5. Give the applications of Zener diode.
6. What is meant by uncontrolled rectifiers?
7. Compare analog and digital signals.
8. What are the basic properties of Boolean algebra?
9. Write the advantages of optical fibre communication.
10. Define the logic operation AND and OR gates with Boolean equation.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) A line voltage of 400 V is applied to three phase star connected identical impedances each containing of a 4 Ω resistance in series with 3 Ω inductive reactance. Find (a) line current (b) total power supplied. (8)

(ii) Explain the construction details and principle of operation of an attraction type moving iron instrument. (8)

Or

(b) (i) Compare PMMC and MI Instruments. (6)

(ii) Explain the principle and operation of dynamometer type wattmeter and derive deflecting torque. Write advantages and disadvantages. (10)

12. (a) (i) Explain the working and principle of single phase transformer. (8)

(ii) Explain the construction and working principle of any two type of single phase Induction motors with neat diagram. (8)

Or

(b) With neat sketches, Explain the working principle and the construction of DC motor. Also derive the torque and speed equation. (16)

13. (a) Explain the half wave and full wave rectifier with neat circuit diagram and wave forms. (16)

Or

(b) Explain the various characteristics of BJT in common emitter configuration with neat diagram. (16)

14. (a) (i) Draw a full adder using logic gates . Explain the truth table with expression of sum and carry. (8)

(ii) Explain in detail about R.S flip flop and T- flip flop. (8)

Or

(b) Write in detail about Analog to Digital converter and Full adder with necessary diagram. (16)

15. (a) With the help of block diagram describe the working of a satellite communication and it's short due on earth station receiver. (16)

Or

(b) (i) Write a short note on amplitude modulation and frequency modulation. (8)

(ii) Explain the basis of fiber optical communication system. (8)

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