

684

Register No.:

April 2024

Time - Three hours
(Maximum Marks: 100)

- [N.B.]**
1. Answer all questions under Part-A. Each question carries 3 marks.
 2. Answer all the questions either (a) or (b) in Part-B. Each question carries 14 marks.]

PART - A

1. State the difference between AC and DC current.
2. Why do we need MCB?
3. Define current ratio of a transformer.
4. List the types of stepper motors.
5. Draw the transistor diagram.
6. What are the NPN and PNP transistors?
7. Convert the decimal number 9087 into an octal number.
8. Write any three Boolean laws.
9. Distinguish between synchronous and asynchronous counter.
10. List the applications of counter.

[Turn over.....

PART - B

11. (a) Explain the construction of lead acid battery with neat sketch.

(Or)

(b) Explain the working principles of Online UPS with its block diagram.

12. (a) Describe about the working principle of stepper motor with necessary diagram.

(Or)

(b) (i) Discuss the preventions and precautions against electric shock. (7)

(ii) Write about the variable losses in transformer. (7)

13. (a) With the diagram explain the forward and reverse characteristics of PN junction diode.

(Or)

(b) With the diagram explain the operation of Bridge rectifiers.

14. (a) Explain the full adder and multiplexer with their diagrams and truth tables.

(Or)

(b) Construct AND, OR, NOT, NOR and XOR gates using NAND gate along with truth tables.

15. (a) Explain the JK flip flop with its symbol diagram, circuit diagram, truth tables, excitation table and its operations.

(Or)

(b) Draw the logic diagram of 4 bit parallel in parallel out shift register. Explain its four modes of operation.
