

Roll No.

Total No. of Pages : 02

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B.Tech. (CE/CSE/EE/ECE/Electrical & Electronics Engg./ME) (Sem-1,2)
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code : BTEE-101

M.Code : 54097

Date of Examination : 03-06-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Answer Briefly :

- a) Compare AC and DC supply.
- b) Explain KSL with the help of suitable example.
- c) What will be the ratio of the resistance of a 200W, 230V lamp to that of a 100W, 115V lamp?
- d) What do you understand by potential difference?
- e) What do you understand by regulated power supply?
- f) Discuss the condition for negative voltage regulation.
- g) What do you understand by transducers?
- h) Discuss the applications of thermistor.
- i) What are flip flops?
- j) Convert binary 11111110010 to hexadecimal.

SECTION-B

2. Derive the expression for root mean square value of an alternating current in terms of maximum value.
3. A shunt generator running at 500 rpm delivers 50 kW at 200 V. The armature and field resistances are 0.02Ω and 40Ω respectively. Calculate generated emf if brush drop is 1V per brush.
4. What is the significance of transformers in electric power system? Also discuss various types of transformers?
5. What are the essential parts of DC machine? Obtain the expression of the emf equation for d.c. generator.

SECTION-C

6. What do you understand by LVDT? Explain the working of LVDT with the help of suitable neat sketch.
7. What do you understand by FET? Discuss its principle of operation, characteristics and applications.
8. Compare magnetic and electric circuits. Also discuss the generation of alternating Electro-Motive Force (emf).
9. Perform the following Boolean operations on the given bit patterns :
 - a) NOT 0010111000101100,
 - b) 0010111000101100 OR 1110000011100001
 - c) 0010111000101100 AND 1110000011100001.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.