Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (2012 to 2017) (Sem.–1,2)

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Subject Code : BTEE-101

M.Code : 54097

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

Answer briefly :

1. Find the average value of periodic sine wave for complete cycle which is clamped to half its positive maximum value.

2. Explain Statically & Dynamically induced EMF with examples.

3. Explain commutator working in DC Motor.

4. Establish condition of maximum efficiency in a single-phase transformer in terms of losses.

5. Establish relation of power consumed in balanced 3 phase load.

6. Convert $(689)_{10}$ into hexadecimal.

7. Compare between an active and a passive transducer.

8. Give the energy band diagram for a semiconductor, insulator and conductor.

9. Implement an XOR gate using NOR gates only.

10. Explain RH screw rule with application.

SECTION-B

11. a) Define Work, Power & Energy. Write down their units in Electrical, mechanical & thermal sense.

    b) Convert delta connected set of 3 resistors R into star.

12. a) Establish relation between Line & phase current in case of balanced 3 phase delta connection.

    b) Establish relation of power consumed in balanced 3 phase load.

13. Explain principle, construction and working of synchronous generator with suitable sketches.

14. Find the average value of sine wave for complete cycle which is clamped to half its negative maximum value.

SECTION-C

15. Explain construction & working of LVDT in detail.

16. Explain the energy band description of semiconductor. List the properties of semiconductor also.

17. Explain the principle of operation and the characteristics of FJT.

18. Implement the following logic expression with logic gates :

$$Y = ABC + AB + BC$$

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.