

Roll No. 

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Total No. of Pages: 02  
Total No. of Questions: 09

**B. TECH. (Sem.-1<sup>st</sup>, 2<sup>nd</sup>)**  
**BASIC ELECTRICAL AND ELECTRONICS ENGINEERING**  
Subject Code: BTEE-101  
Paper ID: [A1104]

Time: 3 Hrs.

Max. Marks: 60

**INSTRUCTIONS TO CANDIDATE:**

1. Section-A is compulsory. Each question carry Two mark.
2. Attempt any five questions from section B and section C with atleast two questions from each section Each question carry Eight marks.

**SECTION-A**

**Q.1.**

- (a) Define diode.
- (b) What is function of carbon brushes in DC machines?
- (c) Define binary and octal number system.
- (d) What is meant by fixed resistor?
- (e) Define self inductance.
- (f) Define 1's compliment.
- (g) Define signed numbers.
- (h) Convert 1101011001 binary to decimal.
- (i) What are the functions of Digital Multi-meter?
- (j) What is FET?

**Section-B**

- Q. 2. A copper wire of diameter 1 cm has a resistance of  $0.15\Omega$ . It was drawn under pressure so that its diameter was reduced to 50%. What is the new resistance of the wire?
- Q. 3. Discuss the operation of PNP transistor in CE and CB configuration.
- Q. 4. Discuss analogy in Electrical and Magnetic circuits.

- Q. 5.** Describe various logic gates with neat diagram and explain how one type of logic gate can be created by combination of other logic gates.

**Section-C**

- Q. 6.** Differentiate between (i) Current and Power (ii) Potential and Potential Difference (iii) Active and Passive components.
- Q. 7.** The self inductance of a coil of 500 turns is  $0.3\text{H}$ . If 75% of the flux is linked with a second coil of 10000 turns, calculate (i) the mutual inductance between the two coils (ii) EMF induced in second coil when current in first coil changes at rate of  $100\text{ A/sec}$ .
- Q. 8.** Discuss working of LVDT and explain it with any one application of LVDT.
- Q. 9.** Explain the working of the transformer with a neat diagram showing its construction.

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