Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

B.Tech. (Sem.-1st & 2nd)

BASIC ELECTRICAL & ELECTRONICS ENGINEERING

Subject Code : EE-101

Paper ID : [A0126]

Time: 3 Hrs.   **Max. Marks: 60**

INSTRUCTIONS TO CANDIDATE:

Attempt five questions from Part-A and Part-B, selecting atleast two from each part. Question No.   I is compulsory.

(2x10=20)

Q.1.   (a)   Explain Fleming's RH & LH Rule.

(b)   Implement an XOR gate using NAND gates only.

(c)   Explain commutator working in DC Generator.

(d)   Explain Hall Effect.

(e)   Explain ideal transformer with the help of phasor diagram.

(f)   Convert $(986)_{10}$ into hexadecimal.

(g)   Write three major differences between rectifier diodes and Zener diodes.

(h)   Write short notes on LVDT.

(i)   Explain the concept of slip.

(j)   Explain 74XX series IC

PART-A

(8 marks each)

Q.2.   Compare & contrast amongst work, power & energy .Write their modes of measurement. Write down their units in Electrical, mechanical & thermal sense also.

Q.3.   Explain in detail the theory of sinusoidal frequency response of parallel RLC ckt. (Series RL paralleled with C) with neat diagrams & various waveforms.

Q.4.   Explain principle, construction and working of DC Motor with suitable sketches.

Q.5.   Explain principle, construction and working of dynamometer type watt meter with suitable sketches.

PART-B

Q.6.   Explain: (i) Thermistor (ii) Thermocouple

Q.7.   Explain in detail about energy band description of semiconductor.

Q.8.   Explain PIN diagram, purpose & description for (i) IC 741 (ii) IC 555

Q.9.   Implement an XOR gate using
        (i)   NAND gates only
        (ii)   NOR gates only

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