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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (All Branches Physics Group) (2018 & Onwards) (Sem.- 1, 2)

**BASIC ELECTRICAL ENGINEERING**

Subject Code : BTEE-101-18

M.Code : 75339

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.

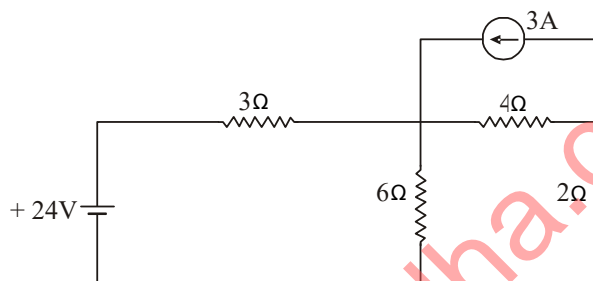
**SECTION-A**

Answer following questions in brief :

- 1) What is an ideal Transformer?
- 2) Define Peak Factor and Form Factor.
- 3) State KCL.
- 4) How will you convert voltage source into current source and vice-versa.
- 5) What is difference between Synchronous Motor and Induction Motor?
- 6) Draw and explain BH curve.
- 7) Draw Phasor diagram for purely capacitive circuit.
- 8) Why can't we operate transformer on DC?
- 9) Define superposition theorem.
- 10) What do you mean by SLIP?

### SECTION-B

- 11) Define resonance. Derive the expression for resonant frequency for parallel LCR circuit.
- 12) The iron loss and full load copper loss of 100KVA, 6600/400Volts single phase transformer are 600Watts and 900 Watts. Calculate the efficiency at full load and half load at 0.8 power factor lag. Calculate the load at which maximum efficiency is obtained and its magnitude at some power factor.
- 13) Explain principle, construction and working of a synchronous generator with suitable sketches.
- 14) State Norton's Theorem, Find the current through 2 ohm resistor using Norton's Theorem.



### SECTION-C

- 15) Explain the relation between line values and Phase values of voltage and current for 3-Phase balanced star connected system and sketch the phasor diagram.
- 16) State advantages, disadvantages and application of auto transformer.
- 17) Explain any two methods of speed control of slip ring 3-Phase induction motor.
- 18) Explain the necessity of Earthing in an electrical installation. Also state the points to be earthed in internal/wiring system of a residential building.

**NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.**