Hall Ticket Number:

Code No. : 22004

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

B.E. II Year (Civil) II-Semester (Main) Examinations, May-2016

Electrical Technology

Time: 1 ½ hours Max. Marks: 35

*Note: Answer **ALL** questions in **Part-A** and any **THREE** from **Part-B***

Part-A (11 Marks)

1. A 330Ω resistor is in series with the parallel combination of four 1 kΩ resistors. A 100V source is connected to this series combination. The resistor carrying maximum current is _____. [1]
2. Explain the difference between step-up and step-down transformers. [1]
3. A 3 phase, 4 pole, 50 HZ induction Motor is running under normal conditions. Calculate the synchronous speed. [1]
4. Unity power factor implies _____ angle between voltage and current vectors. [1]
5. Define Illumination. [1]
6. Discuss the terms (i) frequency (ii) RMS value of an Alternating Quantity. [2]
7. Open circuit test on transformer is performed on _____ side of the transformer. Explain. [2]
8. At standstill the value of slip is unity in an induction motor. Justify. [2]

Part-B (3 X 8 = 24 Marks)
(All bits carry equal marks)

9. a) State and explain Kirchhoff's laws.
   b) A series circuit consisting of a 10 Ω resistor, a 100 μF capacitance and a 10 mH inductance is driven by an AC source of 100V, 50 Hz. Calculate the equivalent impedance, current, power factor and power dissipated in the circuit.

10. a) Draw and explain the constructional features of a single phase transformer.
    b) A 50 kVA, 3300/240V, 60Hz, 1 phase transformer has 660 turns on its primary. Determine
       i) The number of turns on secondary.
       ii) The maximum value of flux in the core.
       Internal drops in the windings are to be ignored.

11. a) State and explain the laws of Illumination.
    b) What are polar curves? Elaborate.

12. Answer any **two** of the following:
    a) Vector representation of alternating quantities.
    b) Approximate equivalent circuit of a transformer
    c) Applications of induction motors

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