MODEL QUESTION PAPER

DSE1

III Semester DIPLOMA Examination, August 2011
CIRCUIT THEORY

Time: 3 Hours   Max. Marks: 75

GROUP A : Answer any three questions.

Q.1   Explain construction and working of RLC parallel resistance circuit.
Q.2   Explain the construction details of RLC transient circuit.
Q.3   Write the expression for delta to star conversion.
Q.4   Derive the expression for measuring power and power factor in a three phase circuit by using two Watt meter for balanced load.
Q.5   Explain node analysis method with example.

GROUP B : Answer any three questions.

Q.6   Explain Resistance transient circuit.
Q.7   What is the relationship between frequency and inductive reactance?
Q.8   Derive current expression for RLC transient circuit. Also explain RL Decay transient.
Q.9   Draw the vector diagram of pure inductor and pure capacitor circuit.
Q.10   Derive the expression for energy stored in capacitor.

GROUP C: All Questions are Compulsory.

Q.11 Fill in the blanks

(i)   Capacitive reactance is _____ proportional to frequency.
(ii)   RMS Value = _____.
(iii)   The total power in 3 phase balanced load can be measured by _____.
(iv)   _____ is the property of conductor while opposes the flow of current through it.
(v)   Mesh analysis is using _____ law.

Q.12 Multiple choice question.

(i)   In which circuit voltage across each resistance is the same_____.
        (a) Series circuit   (b) Parallel circuit
        (c) Series- parallel circuit   (d) Parallel series cicuit.
(ii)   KVL is used to solve _____.
        (a) Mesh   (b) Loop
        (c) Branch   (d) Power
(iii)   Watt is a unit for _____.
        (a) Power   (b) Current
        (c) Voltage   (d) Frequency

(iv)   Unit of electrical energy is_____
       (a) Joules   (b) Ohm
       (c) Mho   (d) Joules/sec

(v)   Electric energy = _____.
       (a) Power × Time   (b) Current × Time
       (c) Voltage × time   (d) None of above

Q.13   True or false

(i)   Super position theorem is only applicable for determining power not voltage & current.

(ii)   Work done in electric circuit generates power.

(iii)   The maximum +ve(positive) or −ve(Negative) value of an alternating is called amplitude or peak value.

(iv)   Power = V × I.

(v)   A 3 phase system can be set up a rotating magnetic field in stationary winding.

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