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2nd Sem / Electrical

Subject : Electrical Networks

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The amplitude of sinusoidal current is_____ (CO2)

a) 1.11 b) 1.57
c) 1.414 d) 0.637

Q.2 The unit of reactive power is _____. (CO2)

a) Volts
b) Volt-ampere
c) Watts
d) Volt-ampere reactive

Q.3 If the frequency of power supply is 60 Hz, the time period of one cycle will be (CO2)

a) 0.02 seconds b) 20 milli-seconds
c) 16.67 milli-seconds d) 0.1667 seconds

Q.4 The maximum value of sine wave AC voltage is 10 V, the r.m.s value of this will be (CO3)

a) 1.414 V b) 14.14 V
c) 6.060 V d) 7.070 V

Q.5 In a pure inductive a.c circuit_____. (CO3)

a) Voltage leads the current by 90^o
b) Current leads the voltage by 90^o
c) Voltage lags the current by 90^o
d) Current is in phase with voltage

Q.6 The power factor at resonance in R.L.C Series circuit is_____ (CO3)

a) 0 b) Unity
c) 0.5 lagging d) 0.5 leading

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 An electrical network with 6 independent nodes will have_____ Loop Equations. (CO1)

Q.8 When a source is delivering maximum power to the Load, the efficiency will be (CO1)

Q.9 An inductive coil has negligible resistance and inductance of 0.1 Henry is connected across 220 Volt, 100 Hz Supply. The power will be _____. (CO3)

Q.10 Three linear elements of D.C. Circuit are _____ (CO1)

Q.11 Norton's theorem is the_____ of Thevenin's theorem. (CO1)

Q.12 It is not possible to multiply a vector quantity with a number . (T/F) (CO2)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 What factors are responsible for induced emf. (CO2)

Q.14 Explain Norton's theorem with an example. (CO1)

Q.15 Define power factor in a.c circuits? State disadvantages of Low power factor. (CO2)

Q.16 Explain with mathematical expression that power consumed in a pure capacitor is zero (CO3)

Q.17 Describe characteristics of a RLC series circuit at resonance. (CO3)

Q.18 Explain the use of Capacitor for Power factor improvement. (CO2)

Q.19 Describe the phenomenon of resonance in a parallel a.c. circuit. (CO3)

Q.20 What is the relation between True power, Apparent power and Reactive Power? Draw Power Triangle also. (CO3)

Q.21 What is three Phase system? How we can generate Three Phase supply. (CO4)

Q.22 Mention the advantages of Three Phase system over single Phase System? (CO4)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the relation between Phase Voltage and Line Voltage in Star Connection with suitable diagram. . (CO4)

Q.24 Define the following : (CO2)

i) Average Value

ii) RMS Value

iii) Form Factor

iv) Peak factor

Q.25 Describe the Mesh Analysis method to solve a D.C Network with suitable example. (CO1)