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3rd Sem / Electrical

Subject : Electric Machines - I

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Electrical machine which converts mechanical energy into electrical energy is known as (CO1)

a) Electrical generator b) Electrical motor

c) Transformer d) All of the above

Q.2 Which of the following motors has high starting torque (CO2)

a) DC shunt motor b) DC series motor

c) Both d) None of the above

Q.3 Transformer are rated in (CO5)

a) KW b) KV

c) KWH d) KVA

Q.4 Which of the following is not a part of transformer (CO5)

a) Conservator b) Breather

c) Buchholz relay d) Exciter

Q.5 Which type of connection in a three phase transformer is used for the substation end of the transmission line? (CO5)

a) Star/Star b) Delta /Delta

c) Star/Delta d) Delta/Star

Q.6 Auto transformer has (CO5)

a) One winding

b) Multiple winding

c) Two winding

d) Does not have winding

SECTION-B

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

Q.7 The efficiency of a D.C. Generator will be maximum when Variable losses = _____ (CO1)

Q.8 DC series motor is a _____ speed motor. (CO2)

Q.9 The open circuit is used to measure the_____ losses. (CO4)

Q.10 In step down transformer, primary turns are_____ than secondary turns. (CO5)

Q.11 A transformer has no_____ losses. (CO4)

Q.12 The auto-transformer requires _____ Copper than a two winding transformer of same rating. (CO5)

SECTION-C

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

Q.13 What are the losses on a DC machine? (CO1)

Q.14 Derive the EMF equation for DC generator. (CO1)

Q.15 Differentiate between a generator and motor.(CO1)

Q.16 Write the methods of speed control of DC shunt motor. Explain any one? (CO2)

Q.17 What are the conditions for parallel operation of 3-phase transformer? (CO5)

Q.18 Draw and explain the Short Circuit Test on the Single-phase transformer. (CO4)

Q.19 Draw a phasor diagram of 1-phase transformer for capacitive load. (CO4)

Q.20 What is Auto-transformer and what are its advantages and disadvantages? (CO3)

Q.21 Explain the concept of overheating due to harmonics in transformer. (CO3)

Q.22 Explain the construction and working of Instrument transformer. (CO3)

SECTION-D

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

Q.23 Explain the construction, principle and working of 1-phase transformer with neat sketch (CO5)

Q.24 Explain and draw the various characteristics of a DC series motor. (CO2)

Q.25 Draw and explain the connections of various types of three-phase transformer. (CO5)