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3rd Sem / Electrical

Subject:- Electrical Machines-I

Time : 3Hrs. M.M. : 60

SECTION-A

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

Q.1 The angle between stator field and rotor field is known as (CO-1)

a) Power factor b) Torque angle

c) Both a & b d) None of the above

Q.2 Electrical machine which converts electrical energy into mechanical energy is known as (CO-2)

a) Electrical generator b) Electrical motor

c) Transformer d) All of the above

Q.3 In a step-up transformer the transformation ratio is (CO-3)

a) More than unity b) Less than unity

c) Unity d) None of the above

Q.4 The yoke of small DC machine is made of (CO-1)

a) Copper b) Aluminium

c) Cast iron d) Stainless steel

Q.5 In transformer copper losses occur in (CO-3)

a) Core b) Windings

c) Bushing d) None of the above

Q.6 The function of the transformer is (CO-3)

a) To increase or decrease the power

b) To change the supply frequency

c) To increase or decrease the voltage

d) All of the above

SECTION-B

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

Q.7 The Brushes of a DC generator is made up of _____ (CO-1)

Q.8 DC shunt motor is a _____ speed motor. (CO-2)

Q.9 Transformer works on the principle of _____ (CO-3)

Q.10 _____ oil is used in a 3-phase transformer. (CO-4)

Q.11 Short circuit test is usually performed to determine _____ losses in a transformer. (CO-3)

Q.12 Transformer core is made of laminations to reduce _____. (CO-3)

SECTION-C

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

Q.13 Differentiate between a generator and motor. (CO-1)

Q.14 What are interpoles? Explain. (CO-1)

Q.15 Write the methods of speed control of DC series motor. Explain any one. (CO-2)

Q.16 Mention the conditions for parallel operation of 3-phase transformer. (CO-4)

Q.17 Derive the EMF equation for single phase transformer. (CO-3)

Q.18 Draw and explain the Open Circuit Test on the single-phase transformer. (CO-3)

Q.19 Draw a phasor diagram of 1-phase transformer for capacitive load. (CO-3)

Q.20 Define auto transformer and write its applications. (CO-3)

Q.21 Differentiate between current transformer and potential transformer. (CO-5)

Q.22 Derive the condition for obtaining maximum efficiency of transformer. (CO-3)

SECTION-D

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

Q.23 Discuss different types of DC generators. Give their connections diagrams. (CO-1)

Q.24 Write down the constructional details of various parts of DC machines with neat diagram. (CO-1)

Q.25 Draw and explain the connections of various types of three-phase transformer. (CO-4)

(Note : Course outcome/CO is for office use only)