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4th Sem / Branch : Electrical,GE,Power Station Engg Elect & Eltx.Engg,Fire Tech & Safety

Subject:- Electrical Machines-I

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 If the supply frequency to the transformer is increased the iron loss. (CO1)
a) will not change b) will be zero
c) will increase d) will decrease

Q.2 Core of the transformer is made of_____ (CO1,2)
a) Silicon steel b) Brass
c) Cast Iron d) Carbon

Q.3 Which of the following motor runs at constant speed (CO4)
a) DC shunt motor b) DC series motor
c) Both A & B d) None of these

Q.4 Armature core of a D.C. motor is made up of silicon steel (CO5,6,7)
a) To reduce eddy current losses
b) To reduce copper losses
c) To reduce hysteresis losses
d) None of the above

Q.5 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.6 The rating of transformer is in (CO5,9)
a) KW b) KVA
c) KVAR d) All of the above

Q.7 In a step -up transformer the transformation ratio is (CO5)
a) unity b) less than unity
c) more than unity d) none of the above

Q.8 Which of the following electrical machine has the high efficiency (CO5,9)
a) D C motor b) D C generator
c) Transformer d) All of the above

Q.9 The Yoke of DC motor is made of (CO2)
a) Silicon steel b) Brass
c) Mild steel d) Cast iron

Q.10 The angle between stator field and rotor field is known as
a) Power factor b) Torque angle
c) Both A & B d) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Write two applications of DC shunt motor (CO4)

Q.12 _____oil is used in a 3-phase transformer (CO9)

Q.13 The shaft of a D.C. machine is made up of_____ (CO1)

Q.14 The commutator segment of DC machine are made up of_____material. (CO1,2)

Q.15 Ideal transformer has_____losses (CO5)

Q.16 Transformer works on the principle of_____ (CO5,6,9)

Q.17 The efficiency of a Transformer will be maximum when Variable losses (CO5)

Q.18 A 6-lap wave wound d.c. motor will have___parallel paths (CO2)

Q.19 Open circuit test is usually performed to determine_____losses in a Transformer. (CO7)

Q.20 Fleming's right-hand rule is used to determine the direction of force in an electrical machine. (True/False) (CO2)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the function of commutator in d.c. machine. (CO1,5)

Q.22 Explain the working principle of D C motor. (CO2)

Q.23 Differentiate between a generator and motor. (CO1,2)

Q.24 Mention the function No-volt release coil in a 3-point starter. (CO2)

Q.25 Draw a phasor diagram of 1-phase transformer for capacitive load.

Q.26 Explain the various types of losses in a d.c. generator. (CO2)

Q.27 Can a D.C. series motor work on no load? Discuss (CO5)

Q.28 Write down the conditions for parallel operation of 3-phase transformers.

Q.29 Write a short note on breather. (CO9)

Q.30 Define efficiency of a transformer and find condition for obtaining maximum efficiency. (CO7)

Q.31 Differentiate between power transformer and distribution transformer. (CO8,9)

Q.32 Drive the e.m.f. equation of D.C. generator. (CO5)

Q.33 Describe the flux control method of speed control of d.c. series motor. (CO3)

Q.34 State the Faraday's law of electromagnetic induction (CO9)

Q.35 Define auto transformer and write its applications. (CO6)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain various methods of cooling a 3-phase transformer. (CO2)

Q.37 Explain the construction , principle and working of 1-phase transformer with neat sketch (CO5)

Q.38 Explain and draw the various characteristics of a d.c. Series motor. (CO8)

Note: Course Outcome (CO) mentioned in the question paper is for the official purpose only.