Q.28 Explain in brief about servo motor and its various types. Write any two applications.
Q.29 Write comparison between induction and synchronous motor.
Q.30 Describe the flux control method of speed control of D.C. Shunt motor.
Q.31 Write down the various applications of a synchronous motor.
Q.32 Write name of starting methods of 3 phase induction motor. Explain any one.
Q.33 Drive an expression for induced e.m.f. Of an alternator.
Q.34 What are advantages of 3 phase system over 1 phase system.
Q.35 Write a short note on methods of power measurement in a 3 phase circuit.

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 Explain the construction, principle and working of a 3 phase induction motor with neat sketch.
Q.37 Explain the construction, principle and working of a universal motor with neat sketch. Write its uses.
Q.38 Explain clearly the effect of change in excitation of a synchronous motor with phasor diagram.

No. of Printed Pages : 4 202442/122442/62443
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4th Sem / MSME
Subject : Dc & AC Machines

Time : 3 Hrs. **M.M. : 100**

SECTION-A

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

Q.1 At start, the slip of the induction motor is
a) Zero b) 0.5
c) 1 d) Infinite

Q.2 Voltage and current relationship in a 3 phase Delta Connected System
a) $V_L = \sqrt{3} V_{ph}$, $I_L = I_{ph}$
b) $V_L = V_{ph}$, $I_L = \sqrt{3} I_{ph}$
c) $V_L = V_{ph}$, $I_L = I_{ph}$
d) $V_L = 3 V_{ph}$, $I_L = 3 I_{ph}$

Q.3 Yoke of DC machine is made of _____
a) Silicon steel b) Brass
c) Cast Iron d) Carbon
e) None of the above

Q.4 For ceiling fans, generally the single phase induction motor used is
a) Permanent Capacitor type
b) Capacitor start
c) Shaded pole
d) Capacitor start and capacitor run

Q.5 The Shaft of an alternator is made up of

a) Silicon steel b) Mild steel
c) Brass d) Cast iron

Q.6 The frequency of voltage generated in large alternators in India is
a) 0Hz b) 25 Hz
c) 50 Hz d) 60 Hz

Q.7 Which of the following motor runs at constant speed
a) DC shunt motor b) DC Series motor
c) Both A & B d) None of above

Q.8 Synchronous speed in RPM of a 5HP, 400 V, 50 Hz 4 poles three phase induction motor will be
a) 750 b) 1500
c) 3000 d) None of the above

Q.9 The motor which is used in the control system are called
a) Stepper motor
b) Linear induction motor
c) Servo motor
d) Synchronous motor

Q.10 Motor in which the rotor turns in discrete movement is called
a) Servo motor
b) 1 Phase induction motor
c) Universal motor
d) Stepper motor

SECTION-B

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

Q.11 The direction of 3 phase induction motor can be reversed by _____.

Q.12 Write any one application of DC Series motor.

Q.13 Over excited synchronous motor working at no load behaves like a _____

Q.14 Give expression % slip =

Q.15 Give any two applications of slip ring induction.

Q.16 Universal motor can work on _____ and _____supply.

Q.17 The rating of alternators is usually expressed in _____.

Q.18 The commutator segments of DC machine are made up of _____ material.

Q.19 A 4 pole lap woundd.c. motor will have _____ parallel paths.

Q.20 E.M.F. Equation of DC Generator Eg =

SECTION-C

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

Q.21 Explain the working principle of a 1- phase induction motor.

Q.22 Draw and explain the torque vs armature current characteristics of a d.c. Series motor.

Q.23 Write a short note stepper motor and its application.

Q.24 Make a list of types of D.C. Machine. Write one application of each.

Q.25 Explain in brief the various methods of speed control of 3 phase Induction motor.

Q.26 Explain how a synchronous motor is made the self-starting.

Q.27 Explain what you would understand by armature reaction in a D.C. Generator and its effects.