2006-SKR ENGINEERING COLLEGE
B.E/B.TECH III SEMESTER MODEL EXAM PAPER
ELECTRICAL MACHINE
ELECTRONICS COMMUNICATION ENGINEERING

JULAY-2006

TIME-3HOUR
MARK-100

PART: A (2×10 = 20)

1.State the purpose of magnetic yoke in a DC machine

2.Why a starter is necessary for a DC motor?

3.What is the function of transformer?

4.Why the load current of a transformer increases, hoe does the input current increases to meet with the new condition.

5.In which type of motor can resistance be introduced in the rotor circuit? What is the effect of it?

6.Is single-phase induction motor self starting? Why?

7.Write down any 4 advantages of short-pitch winding in synchronous machines.

8.Name the different type of single phase synchronous motor

9.What are the major sources of energy used for generation of electrical power?

10.What are the major equipments used in the power station?

PART: B (5×16 = 80)

11.Explain the characteristics (performance and mechanical) of DC motor. List the applications of this motor
(Or)
Draw the diagram of a 3-point and 4 point starter and identify the various parts. Explain the function of no-volt coil and over load release.

12.Obtain the equivalent circuit of a single-phase transformer also draw the approximate equivalent circuit and identify the various parameters.
(Or)
Draw the equivalent circuit for a single phase 1100/200V transformer on which the following results were obtained

a.1100V, 0.5A, 55W on primary side, secondary being open circuit.

b.10V, 80A, 400W on low voltage side, high voltage being short-circuited.

Calculate the voltage regulation and efficiency for the above transformer when supplying 100A at 0.8-pf lagging.

13. a) Explain the torque Vs slip characteristics of slip ring 3-phase induction motor.

b) With the help of a neat sketch, describe the principle of working of a star-delta starter for a 3-phase induction motor. Where it is used?
(Or)
A 37.3 KW, 4 pole, 50Hz induction motor has friction and windage losses of 3320W. The stator losses equal the rotor losses. If the motor delivering full load power output at a speed of 1440 rpm, calculate synchronous speed, slip, mechanical power developed by the motor, rotor copper loss, power transferred from stator to rotor, stator power input and efficiency.

14.Derive the expression for voltage regulation of an alternator. Describe any method (synchronous or

ampere turn method) to determine voltage regulation of synchronous generator.

(Or)

a) Explain the principle and operation of hysteresis motor.

b) What are the advantages of having stationary armature winding in 3-phase synchronous generator?

15..a) Explain the generation, transmission and distribution structure of electric power system with all its components.

b) List the various types of overhead line insulators and its applications.

(Or)

a) Explain the advantages high voltage AC transmission with derivation.

b) Write the short notes on EHVDC. Name the different types of HVDC links.