(5)

SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO: | | | | | | | | | | | | | **Total number of pages:[02]**

Total number of questions: 06

B.Tech. -EE/ 5th Sem

Asynchronous Machines

Subject Code: BTEE-501A

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

PART A (2×10)

Q1.

(a) Why does an induction motor never run on synchronous speed?
(b) What will the effect on torque developed by an induction motor if applied voltage is reduced to half with frequency unchanged?
(c) Give some applications of stepper motor.
(d) Distinguish between double cage and deep bar construction.
(e) What is the effect of skewing the rotor slots of an induction motor rotor?
(f) What is meant by split-phase method of motor starting?
(g) State working principle of Repulsion motor.
(h) Mention few applications of AC series motors.
(i) How the direction of capacitor start induction motor can be reversed?
(j) Which kind of information is obtained from no load test in a three phase induction motor?

PART B (5×8)

Q2. Discuss the construction and working of a split phase induction motor and give its applications.

OR

Explain construction, working principle, advantages and disadvantages of shaded pole

induction motor.

Q3. Explain the torque-slip characteristics of 3-phase induction motor.

OR

Draw the equivalent circuit of three phase induction motor and discuss computation of equivalent circuit parameters.

Q4. Describe with the help of diagrams the constructional details and action of a double cage induction motor.

OR

Discuss effect of voltage injection in rotor circuit of a slip ring induction motor.

Q5. State and explain double revolving field theory of single phase induction motor. Deduce its equivalent circuit.

OR

Derive an expression for-the torque developed in repulsion motor. Draw its phasor diagram

Q6. Write the short notes on following:

a) Stepper Motor.
b) Starting methods of 3-phase induction motor

OR

a) Scherbius scheme ol speed control
b) Linear Induction Machine