

**ELECTRICAL MACHINES II**  
**IMPORTANT 16 MARK QUESTIONS**

**UNIT I**

1. Derive the emf equation of an alternator. Explain pitch factor and distribution factor.
2. Discuss the effects of alternator on load with relevance to various power factors.
3. What is the effect of armature reaction at different power factors on synchronous machine?
4. Explain load sharing of two alternators working in parallel. What is the effect of (i) change in excitation and (ii) change in steam supply
5. Explain two reaction theory of synchronous machine. How can  $X_d$  and  $X_q$  be determined?

**UNIT II**

1. Explain the working of synchronous motor with different excitations?
2. Explain the significance of V curve and inverted V curve
3. Explain the effect changing excitation on armature current and power factor?
4. (i) What are the various torques associated with synchronous motor operation (ii) Discuss various methods starting synchronous motor
5. Explain the principle of operation of synchronous motor and list out the characteristics features of synchronous motor

**UNIT III**

1. Describe the constructional features of both squirrel cage induction motor and slip ring induction motor. Discuss the merits one over another
2. Explain about (i) Double cage induction motor (ii) Induction generator
3. (i) Derive the torque equation of 3phase induction motor and deduce condition for maximum torque  
(ii) Explain Torque – Slip characteristics of 3phase induction motor
4. Draw the equivalent circuit of induction motor and deduce the approximate equivalent circuit
5. Discuss different power stages of 3phase induction motor and derive the relation between  $P_2$ ,  $P_{cu}$  &  $P_m$

**UNIT IV**

1. Describe with neat diagram the principle and working of a star – delta starter in 3phase induction motor
2. Explain in detail about slip recovery schemes
3. Explain speed control of 3phase induction motor by (i) pole changing and (ii) cascade control
4. Explain various methods of speed control from rotor side of an induction motor?
5. Explain various methods of speed control from stator side of an induction motor?

**UNIT V**

1. Explain the Double field revolving theory of operation of single phase induction motor
2. Explain shaded pole induction motor with diagrams
3. Explain different starting methods of single phase induction motor?
4. Explain construction, working, characteristics and applications of reluctance motor and hysteresis motor.
5. Explain construction, working, characteristics and applications of repulsion motor and a.c series motor.