Registration No:

Total Number of Pages: 03

3rd Semester Regular Examination 2016-17
ELECTRICAL MACHINE - I
BRANCH: ELECTRICAL
Time: 3 Hours
Max Marks: 100
Q.CODE:Y531

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)

(2 x 10)

Q1   Answer the following questions:

a) In a transformer, zero voltage regulation at full load is
    (A) not possible
    (B) possible at unity power factor load
    (C) possible at leading power factor load
    (D) possible at lagging power factor load

b) The slip of an induction motor normally does not depend on
    (A) rotor speed (B) synchronous speed
    (C) shaft torque (D) core-loss component

c) For a single phase capacitor start induction motor which of the following statements is valid?
    (A) The capacitor is used for power factor improvement
    (B) The direction of rotation can be changed by reversing the main winding terminals
    (C) The direction of rotation cannot be changed
    (D) The direction of rotation can be changed by interchanging the supply Terminals

d) A three-phase 440 V, 6 pole, 50 Hz, squirrel cage induction motor is running at a slip of 5%. The speed of stator magnetic field to rotor magnetic field and speed of rotor with respect of stator magnetic field are
    (A) zero, −5 rpm (B) zero, 955 rpm
    (C) 1000 rpm, −5 rpm (D) 1000 rpm, 955 rpm

e) Distributed winding and short chording employed in AC machines will resultin
    (A) increase in emf and reduction in harmonics
    (B) reduction in emf and increase in harmonics
    (C) increase in both emf and harmonics
    (D) reduction in both emf and harmonics

f) A 500 kVA, 3-phase transformer has iron losses of 300 W and full load copper losses of 600 W. The percentage load at which the transformer isexpected to have maximum efficiency is
    (A) 50.0% (B) 70.7%(C) 141.4% (D) 200.0%

g) A single phase transformer has a maximum efficiency of 90% at full loadand unity power factor. Efficiency at half load at the same power factor is
    (A) 86.7% (B) 88.26%(C) 88.9% (D) 87.8%