

Enrollment No: _____ Exam Seat No: _____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Testing and Commissioning of Electrical Machines

Subject Code: 4TE06TCM1

Branch: B.Tech (Electrical)

Semester: 6

Date: 04/05/2018

Time: 02:30 To 05:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1

Attempt the following questions:

(14)

- a) _____(Dummy Coil/ Skew Coil/ Main Coil) is used as a part of mechanical balance.
- b) _____(Generating/ Derating/Moderating/ Governing factor) is utilized for consideration of heat losses in the machine.
- c) Out of different methods available for testing of D.C. motors, Swinburne's test and Hopkinson's test are commonly used in _____(shunt motor/shunt generator/series motor/ Series Generator)
- d) A transformer oil must be free from _____. (Sludge/odour/moisture/gases)
- e) Power transformers are generally designed to have maximum efficiency around _____.(half load/full load/no load)
- f) The dielectric strength of transformer oil is measured to assess_____(voltage/break down strength/moisture/ life)
- g) In the transformer following winding has got more cross-sectional area
 - (a) Low voltage winding
 - (b) High voltage winding
 - (c) Primary winding
 - (d) Secondary winding
- h) The excessive temperature rise in the transformer causes maximum damage to _____.(Winding Insulation/Bushings/ Core bolt/Core laminations)
- i) Earth wire or ground wire is made of _____ material.
- j) For which among the following the current ratings are not required?
 - (a) Circuit breakers
 - (b) Relays



- (c) Isolators (d) Load break switch
- k) Zero power factor method of an alternator is used to find its
 (a) field resistance (b) armature resistance
 (c) efficiency (d) voltage regulation.
- l) In a synchronous motor, the rotor Cu losses are met by
 (a) motor input (b) armature input
 (c) d.c. source (d) supply lines
- m) Breaking capacity of a circuit breaker is usually expressed in terms of _____.
 (Amperes/MVA/Volts/MW)
- n) The efficiency of a 3-phase induction motor is approximately proportional to
 (a) $(1 - s)$ (b) s
 (c) N (d) N_s

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
 (a) Explain field test on two identical dc series machines. (07)
 (b) Explain Swinburne test of dc machine. (07)
- Q-3 Attempt all questions (14)**
 (a) Briefly explain polarization index and state its significance. (07)
 (b) Explain the tan delta test on transformer. (07)
- Q-4 Attempt all questions (14)**
 (a) Explain Hopkinson test of dc machines with advantages and disadvantages. (07)
 (b) Explain commissioning steps for synchronous machine. (07)
- Q-5 Attempt all questions (14)**
 (a) Describe the Hammer test for 3-phase induction motor. (07)
 (b) Explain the classification of various tests performed on induction motor. (07)
- Q-6 Attempt all questions (14)**
 (a) Explain soil resistivity measurement. (07)
 (b) Explain open circuit test and short circuit test on synchronous machine. (07)
- Q-7 Attempt all questions (14)**
 (a) Explain Murray loop test and warley loop test. (07)
 (b) Explain temperature rise test on bus bar. (07)
- Q-8 Attempt all questions (14)**
 (a) Describe the test setup for impulse testing of power transformers. (07)
 (b) Explain drying out process of DC machines. (07)

