

C. U. SHAH UNIVERSITY

Summer Examination-2022

Subject Name: Testing and Commissioning of Electrical Machines

Subject Code: 4TE06TCM1

Branch: B.Tech (Electrical)

Semester: 6

Date: 07/05/2022

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.
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Q-1 Attempt the following questions: (14)

- a) The speed at which rotating magnetic field revolves is called? (1)
- b) Swinburne's test can be performed at (1)
- (A) Any load (C) Only full load
- (B) Only no load (D) Only half load
- c) The rotational or stray losses includes (1)
- (A) Iron losses only
- (B) Iron losses, friction and windage losses
- (C) Iron losses, copper losses, friction and windage losses
- (D) None of these
- d) The rotational losses in DC machines is equal to the (1)
- (A) Kinetic energy of armature
- (B) Half of the kinetic energy of armature
- (C) Square of the kinetic energy of armature
- (D) Rate of change of kinetic energy
- e) In regenerative test, the supply is given to the motor (1)
- (A) To account for losses
- (B) To drive generator
- (C) Both (a) and (b)
- (D) None of these
- f) While conducting short-circuit test on a transformer which side is short (1)
- circuited?
- (A) High voltage side (C) Low voltage side
- (B) Primary side (D) Secondary side
- g) Which gas is formed near to the conductors by producing a hissing (1)
- noise?
- (A) Oxygen (C) Ozone
- (B) Hydrogen (D) Nitrogen
- h) How is the restriking voltage measured? (1)
- (A) RMS value (C) Peak value
- (B) Instantaneous value (D) Average value



- i) A transformer can have zero voltage regulation at _____ (1)
 (A) Leading power factor (C) Lagging power factor
 (B) Unity power factor (D) Zero power factor
- j) The most common method used to check for shorted windings is to perform (1)
 (A) Field test (C) Drop test
 (B) Regenerative test (D) Brake test
- k) In transmission system, the weight of copper used is proportional to (1)
 (A) Square of voltage
 (B) Voltage.
 (C) 1/ (square of voltage)
 (D) 1/ voltage
- l) Line efficiency increases for _____ transmission voltages. (1)
 (A) Higher (C) Lower
 (B) Both (a) and (b) (D) None of these.
- m) The insulators fail due to (1)
 (A) Flash over (C) Short circuits
 (B) Deposition of dust (D) All of these
- n) Sumner's test is conducted on transformers to study effect of (1)

 (A) Temperature (C) Stray losses
 (B) All-day efficiency (D) Cannot be determined

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

- Q-2 Attempt all questions (14)**
 (a) Explain regenerative test of dc machine. (07)
 (b) Write short note on Neutral earthling. (07)
- Q-3 Attempt all questions (14)**
 (a) Explain drying out procedure for induction motor. (07)
 (b) Discuss Murray loop test. (07)
- Q-4 Attempt all questions (14)**
 (a) Explain Swinburne test of dc machine with advantage and disadvantage. (07)
 (b) Write short not on tan delta test for transformer. (07)
- Q-5 Attempt all questions (14)**
 (a) Explain commissioning test of synchronous motor. (07)
 (b) What is slip? Explain different methods to find out slip. (07)
- Q-6 Attempt all questions (14)**
 (a) Explain procedure for determination of polarization index for transformer. (07)
 (b) Give reasons and remedial steps for 3 phase slip-ring induction motor for following conditions: (07)
 1) Motor fails to start
 2) Motor runs slow
 3) Motor runs hot



