

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C. U. SHAH UNIVERSITY

## Winter Examination-2022

Subject Name : Testing and Commissioning of Electrical Machines

Subject Code : 4TE06TCM1

Branch: B.Tech (Electrical)

Semester: 6

Date: 21/09/2022

Time: 11:00 To 02:00

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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<b>Q-1</b>	<b>Attempt the following questions:</b>	<b>(14)</b>
	a) Why stepped core is used in a transformer?	01
	b) What is the phase shift between primary and secondary in a DY1 transformer?	01
	c) State the difference between type test and routine test.	01
	d) Why a dc series motor should not be started without any load?	01
	e) What is single phasing of three phase induction motor?	01
	f) Ratio and polarity test are type tests. True or false?	01
	g) List different types of cooling system of power transformer.	01
	h) Explain in brief touch potential.	01
	i) In OC test on a transformer, which side is usually left open. hv or lv?	01
	j) What will happen if phase sequence of supply to a three phase induction motor is reversed?	01
	k) Write full form of ELCB.	01
	l) What is the maximum possible speed of a synchronous machine which is operating at 50 Hz supply frequency?	01
	m) Which device is commonly used to measure insulation resistance of transformer winding?	01
	n) What should be the oil level in the conservator tank of a power transformer?	01

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

<b>Q-2</b>	<b>Attempt all questions</b>	<b>(14)</b>
A	Explain difference between DY1 and DY11 transformers. Can we connect them in parallel with each other? If yes how?	07
B	Describe test setup for impulse testing of Power Transformer	07
<b>Q-3</b>	<b>Attempt all questions</b>	<b>(14)</b>
A	Explain Hopkinson's test with its circuit diagram.	07
B	Describe process of separation of losses in d.c. shunt machine.	07



Q-4	Attempt all questions	(14)
A	Explain steps for commissioning a three phase induction motor.	07
B	Describe following tests to be performed on three phase induction motor. (1) High voltage test. (2) Resistance measurement test.	07
Q-5	Attempt all questions	(14)
A	Explain drying out process of a synchronous generator?	07
B	Describe temperature rise test on a synchronous machine.	07
Q-6	Attempt all questions	(14)
A	Explain mechanical endurance test on circuit breaker.	07
B	Explain any two routine tests to be performed on circuit breaker.	07
Q-7	Attempt all questions	(14)
A	Explain Murray loop test to determine fault location of a cable.	07
B	Write short note on de-rating of cable capacity.	07
Q-8	Attempt all questions	(14)
A	Write note on substation grid earthing.	07
B	What is Polarization index? Describe procedure for drying out of power transformer.	07

