

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code:2180912****Date:09/05/2019****Subject Name:Condition Monitoring****Time:10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
Q.1 (a) Explain polarization index of transformer.	03
(b) What is insulation resistance? Explain detail Insulation resistance of Transformer and induction motor.	04
(c) Explain modern tools and techniques used in condition monitoring.	07
Q.2 (a) Explain Gas ratio method.	03
(b) Explain Aging of electrical Power infrastructure.	04
(c) Explain Frequency Response Analysis method for power transformer.	07
OR	
(c) Explain Transformer oil paper insulation system.	07
Q.3 (a) Explain signature analysis of condition monitoring.	03
(b) Explain Partial Discharge measurements.	04
(c) What in necessity of Frequency response analysis? Explain various test of FRA.	07
OR	
Q.3 (a) Explain OLTC and Bushing diagnostics of transformer.	03
(b) Write insulation failure modes.	04
(c) Explain modern approach for condition monitoring of power transformers.	07
Q.4 (a) Write factor affecting degradation of insulation.	03
(b) Write any one rotating machine full specification as per standard and Briefly describe insulation failure modes.	04
(c) Explain in brief Construction, operation and failure modes of electrical machines.	07
OR	
Q.4 (a) Classify types of insulation used in rotating machine.	03
(b) Explain Instrumentation requirement for Temperature measurement.	04
(c) Explain structure of electrical machines and their types.	07
Q.5 (a) Explain Air-Gap Eccentricity.	03
(b) Explain Vibration terminology.	04
(c) Explain identifying methods of mechanical faults with motor current signature analysis.	07
OR	
Q.5 (a) Explain shorted turns in stator windings.	03
(b) Explain lubrication oil and bearing degradation.	04
(c) Explain condition monitoring of rotating elements.	07
