

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2180912

Date: 15/11/2018

Subject Name: Condition Monitoring

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

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

- Q.1** (a) Write different maintenance strategies. **03**
(b) Explain planned and preventive maintenance of transformer. **04**
(c) Explain transformer failure pattern and failure analysis. **07**
- Q.2** (a) What are the conditions for applying gas ratio method. **03**
(b) Explain the fault in key gas method. **04**
(c) Explain frequency response analysis method for power transformer. **07**
- OR**
- (c) Explain tools and techniques of condition monitoring. **07**
- Q.3** (a) Explain time domain dielectric response methods. **03**
(b) Explain Acoustic techniques. **04**
(c) Explain frequency domain dielectric frequency response (DFR) method and also write advantages and disadvantages of DFR measurement in time and frequency domain. **07**
- OR**
- Q.3** (a) Explain need of monitoring. **03**
(b) Explain interpretation of frequency response measurements in detail. **04**
(c) Explain combined criteria for dissolved gas analysis. **07**
- Q.4** (a) Explain root causes and failure modes. **03**
(b) Write construction of electrical machines. **04**
(c) Explain temperature measurement in details. **07**
- OR**
- Q.4** (a) Write bearing faults and shaft voltages. **03**
(b) Explain bulk measurement for temperature monitoring. **04**
(c) Explain structure of electrical machines and their types **07**
- Q.5** (a) Explain Hot – Spot measurement. **03**
(b) Explain frequency spectrum monitoring. **04**
(c) What are the factors that affect detection. **07**
- OR**
- Q.5** (a) Explain sleeve bearing. **03**
(b) Explain fault that can be detected with motor current signature analysis. **04**
(c) Write insulation degradation detection and explain particulate detection for chemical analysis. **07**
