

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E SEMESTER–VIII EXAMINATION –SUMMER 2020

Subject Code: 2180901

Date: 26/10/2020

Subject Name: TESTING AND COMMISSIONING OF ELECTRICAL EQUIPMENT

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) What do you mean by polarization index with reference to small size machine and large size machine? **03**
- (b) What is the importance of insulation resistance for electrical equipment? What is the reason for deterioration of insulation resistance? **04**
- (c) Which are different test performed on electrical equipment from manufacturing process to commissioning process? What is their significance? **07**
- Q.2** (a) Give the connection difference between D_{Y1} and D_{Y11} for transformer. **03**
- (b) Explain how the H.V bushing and L.V. Bushing installed in transformer. Explain type of bushing. **04**
- (c) What are the characteristics of transformer oil? How can we improve it? **07**
- OR**
- (c) What are needs for drying out of transformer? Explain hot oil circulation method for drying out. **07**
- Q.3** (a) What are the possible reasons for vibration in D.C.Machine? Give their remedies. **03**
- (b) Where the insulation resistance of transformer is to be measured? Why is resistances decrease after some time? **04**
- (c) How the switching impulse test performed on transformer? Give the characteristics of switching impulse. **07**
- OR**
- Q.3** (a) What is importance of polarity test in power transformer and current transformer? **03**
- (b) Why we are measuring R15 and R60 reading while measuring PI index? **04**
- (c) Give the reason, why should we kept the tapping on LV side not on HV side in some special case of transformer? **07**
- Q.4** (a) What are reasons for vibration in induction motor? **03**
- (b) What are the reasons for temperature rise in motor while carrying a rated load? **04**
- (c) How can we find short circuit winding or short circuit bar in rotating machine? **07**
- OR**
- Q.4** (a) What are the conditions for parallel connection of transformer? **03**
- (b) Can we connect D_{Y1} AND D_{Y11} transformer in parallel? Justify your answer. **04**
- (c) Draw the vector diagram and connection diagram for Y_{Y0} and D_{D0} . **07**
- Q.5** (a) What are the possible reasons if circuit breaker is not TURN ON if we give ON command? **03**
- (b) How the contact resistance can be measured in circuit breaker? **04**
- (c) What are the different test performed on out-door circuit breaker? **07**
- OR**
- Q.5** (a) What are the methods to measure earthling resistance in sub-station? **03**
- (b) Draw Y_{Z0} and Y_{Z1} connection for three phase transformer. **04**
- (c) Which are the different tests performed for commissioning of transformer? Explain any two with its significance. **07**