Total No. of Printed Pages:2

SUBJECT CODE NO:- K-57
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(EEP/EE/EEE) Examination Oct/Nov 2016
Testing & Maintenance of Electrical Equipment
(Revised)

[Time:Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 & Q.6 are compulsory.
ii)solve any two question from remaining in each section .
iii) Assume suitable data if necessary

Section A

Q.1 a) Define : 1) destructive testing 2) NDT 3) maintenance 06

b) Fill in the blanks 04
I. Acidity in a transformer can be resulted in ----- fault
II. Resistance of -----winding in a single phase motor is more than other one
III. If tap changer of a trans former offers loose contacts then ------winding of a transformer gets heated
IV. Insulation failure between core & LV can be predicted by reading of ------ in star to ground connection

Q.2 a) What routine tests are taken on the 1-PH I.M ? explain any one testing procedure in details 10

b) Explain effect of frequent switching on the power handling capacity of the transformer 05

Q.3 a) List out the reasons for development of excessive vibrations in a transformer & describe method of detection for any one reason 08

b) Write the testing method to find out over leakage current as per IS & write the no. of ISS 07

Q.4 a) What are the causes for development of coil to coil open circuit fault in the HV winding if a transformer during manufacturing 07

b) Draw the flow chart of transformer manufacturing processes & indicate various testing during manufacturing by test blocks 08

Q.5 Write short notes on any three 15
a) Differences in Routine & type tests on I.M
b) Contamination of transfer oil, reasons
c) Need of de-hydration of power transformer
d) Need of conservator top-up

Section –B

Q.6 a) Write the application of following to detect the fault & name the fault which can be detected by that test equipment 06

1. Turns ratio testing
2. Sonography (ultra sound) tasting
3. Megger testing

b) Write the effect of fault in one sentence 04

1. Rotor of Sq. cage I.M not dynamically balanced
2. Polarity of HV & LV winding found exactly same
3. Yoke of DC motor got racked
4. Oil acidity in transformer is more than specified limit

Q.7 a) Explain the procedure of transformer oil in the transformer windings 07

b) Explain the working of vibration measuring machine (E. M. swinging) 08

Q.8 a) Diagnose the fault & comment , how will you confirm your judgment? What instrument you will use for your support ? 08

1. Motor is not giving required torque
2. Only R-phase of transformer gets more heated in balanced load

b) Enlist the reasons by which there is a winding failure in HV side of a transformer & name the instrument /test method to identify that reason 07

Q.9 a) Explain what effects will be there on the equipment if following fault is there 08

1. Loose connections at transformer load side terminals
2. Nuts & bolts got loosened in body part of 3 ØSq cage I.M

b) Write down the steps invaded in manufacturing of 1-phase induction motor how many test are necessary in Routine test of the motor 07

Q.10 Write short notes on any three 15

1. ISS for 3-phase Induction motor
2. Industrial X-ray machine
3. Heatrun testing
4. HV with stand test