

GUJARAT TECHNOLOGICAL UNIVERSITY**PDDC - SEMESTER-VI. EXAMINATION – SUMMER 2016****Subject Code: X60903****Date: 06/05/2016****Subject Name: High Voltage Engineering****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.

- Q.1** (a) With a neat sketch explain transformer oil filtration plant **07**
(b) Describe Marx Circuit. **07**

- Q.2** (a) Explain electrostatic voltmeter with its merits and demerits. **07**
(b) State the different methods of calculation of electric field. **07**
Explain chart simulation method in detail.

OR

- (b) What is electric field stress? How it is calculated? In which type of field it is maximum? **07**

- Q.3** (a) Explain capacitance potential divider. **07**
(b) Write short note on null detector and partial discharge. **07**

OR

- Q.3** (a) Explain: 1) phase angle 2) average discharge current 3) discharge power **07**
(b) What are the causes of switching and power frequency over-voltages? How are they controlled in power systems? **07**

- Q.4** (a) State the various high voltage test. **07**
(b) Explain various transformer oil test. **07**

OR

- Q.4** (a) What is meant by insulation co-ordination? How are the protective devices chosen for optimal insulation level in power system? **07**

- Q.4** (b) Write a short note on Van de graaff generator. **07**

- Q.5** (a) Write a short note on design and layout of HV laboratory. **07**
(b) Draw a tree chart clearly showing the breakdown theories applicable for different dielectrics. **07**

OR

- Q.5** (a) State and explain the various factors affecting the breakdown of gaseous dielectrics. **07**
(b) Write a short note on Cockroft Walton voltage multiplier circuit. **07**
