

Code: EEPC2T4

I M.Tech-II Semester–Regular/Supplementary Examinations – July 2017

**ADVANCED POWER SYSTEM PROTECTION
(POWER SYSTEM CONTROL AND AUTOMATION)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) What are the merits and demerits of a Static relay over electromechanical relay? 7 M

b) Describe the functional requirements of protective relaying. 7 M

2. Explain the significance of phase comparators in protection and explain any two types of comparators. 14 M

3. With the help of neat sketches explain the principle of the following: 14 M
 - a) IDMT over current static relay
 - b) Definite time over current static relay.

4. a) Derive the mathematical expressions for Impedance relay. 7 M

- b) Explain the MHO relay characteristics on R-X diagram.
Discuss the range setting of various distance relays
placed on a particular location. 7 M
5. a) Draw a schematic diagram of Transley scheme and
explain its principle of operation. 7 M
- b) Explain about phase comparison carrier current
protection with a neat sketch. 7 M
6. a) What do you understand by a zone of protection?
Discuss various zones of protection. 10 M
- b) How do you detect the earth faults in transformers?
4 M
7. a) Elaborate the advantages of microprocessor relays.
7 M
- b) Write short notes on micro processor based Impedance
relay. 7 M
8. Explain elaborately the protection of Substations &
Transmission lines against lighting strokes. 14 M