

Code: 17EEPC1T3

I M.Tech - I Semester – Supplementary Examinations December 2018

**ADVANCED POWER SYSTEM PROTECTION
(POWER SYSTEM & CONTROL)**

Duration: 3 hours

Max. Marks: 60

Answer the following questions.

1. a) What are the advantages of static relays over electromagnetic relays? 7 M

b) Describe about amplitude comparators used in static relays and their types. 8 M

OR

2. a) Explain current setting of an over current relay with an example. 7 M

b) Explain the operation of Static directional over current relay with the help of block diagram. 8 M

3. a) What is the effect of Arc resistance on the performance of distance relays? 7 M

- b) Draw the circuit diagram of three input amplitude comparator. Explain how to obtain elliptical characteristics using this circuit? 8 M

OR

4. a) What is wire pilot protection? Explain its operating principle. 7 M

- b) Describe about Phase comparison carrier current protection. 8 M

5. a) How can R and X of the line as seen by the relay be calculated by using Differential Equation Technique? 7 M

- b) Draw the flow chart of rationalized haar technique used for calculation of R and X. 8 M

OR

6. a) Draw and describe the general block diagram of Microprocessor based protective relays. 7 M

- b) Explain the realization of MHO and offset MHO relays using micro processor. 8 M

7. What are the protection schemes used for synchronous generator? Explain briefly. 15 M

OR

8. a) Describe the faults in transformer. 7 M

- b) In detail explain the digital protection of transformer. 8 M