

Code: 17EEPC1T3

**I M.Tech-I Semester-Regular Examinations-February 2018****ADVANCED POWER SYSTEM PROTECTION  
(POWER SYSTEM & CONTROL)**

Duration: 3 hours

Max. Marks: 60

Answer the following questions.

1. a) What are the basic functional blocks of static relays and explain? 7 M
- b) Derive duality between amplitude and phase comparator. 8 M

(OR)

- 2.a) Explain coincidence circuit type phase comparator. 7 M
- b) With neat circuit diagram explain the principle of operation of inverse static over current relay. 8 M

- 3.a) Describe the effect of power surges on the performance of different types of distance relays. 8 M
- b) Explain swivelling characteristics of distance relay. 7 M

(OR)

- 4.a) Explain about circulating current schemes. 7 M
- b) Compare and contrast carrier aided distance protection and carrier current protection. 8 M

5.a) Explain in detail about discrete Fourier transform technique. 7 M

b) Describe a digital technique for the removal of DC offset component from the current signal. 8 M

(OR)

6.a) Describe the realization of an over current relay using a microprocessor. 7 M

b) With block diagram describe the realization of impedance relay. 8 M

7.a) List the faults in synchronous generators. 7 M

b) Describe the digital protection of synchronous generator. 8 M

(OR)

8. Explain the different schemes used for transformer protection. 15 M