

Code No: C5302

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I SEMESTER EXAMINATIONS, APRIL/MAY-2012
ADVANCED POWER SYSTEM PROTECTION
(POWER SYSTEM CONTROL & AUTOMATION)**

Time: 3hours**Max.Marks:60**

**Answer any five questions
All questions carry equal marks**

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- 1.a) Define Static relay? Mention the advantages and disadvantages of static relays.
- b) Explain the following terms related to power system protection
 - (i) Over current relays time current characteristic
 - (ii) current setting
 - (iii) Time setting
 - (iv) plug setting
2. Explain the principle of duality between the amplitude and phase comparators with neat Sketch.
3. Explain the principle of operation of the following with neat block diagram.
 - a) Instantaneous over-current relay
 - b) Directional over-current relay
4. Realize angle impedance relay and reactance relay using amplitude and phase comparators.
- 5.a) Explain the various types of switched distance schemes used in power system protection.
- b) Explain the different types Pilot relaying schemes
6. Explain the principle of operation of the following Microprocessor based relays with flowchart and block diagram.
 - a) Over current relays
 - b) Directional Relay
7. Explain the generalized interface for distance relays by means of Digital relaying algorithm.
8. Derive the generalized mathematical expression for distance relays and realize the various types of distance relays using microprocessor.
