**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**M.Tech II Semester Examinations, October/November 2011**
**ADVANCED POWER SYSTEM PROTECTION**
**(COMMON TO ELECTRICAL POWER SYSTEMS, ELECTRICAL POWER**
**ENGINEERING, POWER ENGINEERING & ENERGY SYSTEMS)**
Time: 3hours                                                                                      Max. Marks: 60
**Answer any five questions**
**All questions carry equal marks**
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1. Explain how an Instrument Transformers can be used for the protection purpose.
[12]

2. a) Explain the operation of definite time static over current relay.
   b) Explain the over current relay time-current characteristics in detail.      [6+6]

3. a) Realize the Angle admittance (MHO) relay using amplitude comparator.
   b) Realize the Angle impedance (OHM) relay using amplitude comparator.[6+6]

4. a) Explain the operation of Elliptical relay.
   b) Explain the operation of restricted reactance relay.                          [6+6]

5. Explain the following Pilot relaying schemes for the protection of transmission line sections.
   a) Balanced voltage (opposed voltage) scheme
   b) b) Half-wave composite scheme.                                                  [6+6]

6. Realize the Directional Over current relay using Microprocessor based scheme.
[12]

7. Explain the Phase comparison carrier current protection scheme for the protection of transmission line sections.                                                    [12]

8. Write short notes on
   A) Digital relaying algorithm.
   B) Microprocessor based impedance relay.
   C) Wire-Pilot protection.                                                        [4+4+4]

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