Code No: **D5604** **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech II - Semester Examinations, March/April 2011
POWER SYSTEM PROTECTION WITH STATIC RELAYS
(POWER SYSTEMS HIGH VOLTAGE)

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

Answer any five questions
All questions carry equal marks
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1. (a) Explain the classification of relays based on technology.
   (b) Write advantages and disadvantages of relays. [12]

2. Derive generalized mathematical equation for amplitude and phase comparison. [12]

3. (a) With the help of circuit diagram explain the principle of operation of opposed voltage type amplitude comparator.
   (b) Explain block spike type phase comparator. [12]

4. With neat circuit diagram explain the operation of static definite time over current Relay. [12]

5. (a) Explain time graded system of protection.
   (b) Explain over current protection of radial feeder. [12]

6. With the help of threshold characteristics and power swing locus on R-X diagram describe the effect of power swing on the performance of directional impedance, directional reactance and mho relays. [12]

7. What are the different conic characteristics and how it can be obtained using three input amplitude comparators. [12]

8. Discuss in detail the differential protection of three phase generator. [12]

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