Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.TECH(EE)/SEM-2/PSM-203/2012

2012

POWER SYSTEM PROTECTION

Time Allotted : 3 Hours Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer any *five* questions. 5 × 14 = 70

1. a) Write down the principle of directional over-current relay and explain with neat sketch. 10

   b) What is auto-reclosing ? Discuss about single shot auto-reclosing in EHV transmission lines. 4

2. What is Distance relay ? Explain with neat diagram, the Distance Protection. 2 + 12

3. a) Write down the principle of Differential relay. What are the C.T. requirements on Differential relay ? 4 + 3

   b) Write down the effect of Power Surges (Power Swings) on the performance of Distance relay and calculate the power swing analysis. 7

4. Describe the Different Protection schemes of large size 3-ϕ alternator with necessary connection diagram.

5. a) Describe the different protection schemes of 3-ϕ Transformer with necessary connection diagram. 10

   b) When will magnetising current drawn by a 3-ϕ transformer be maximum ? What is the procedure adopted in order to protect the transformer from this adverse effect ? 4

6. Describe the different protection schemes of 3-ϕ Induction Motor with necessary connection diagram.

7. Write short notes any *two* of the following : 2 × 7

   a) Protection scheme of capacitor bank

   b) Bus zone protection

   c) Directional relay.