Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) (Electrical & Electronics Engg.) (2012 Onwards)
(Sem.–6)
POWER SYSTEM-II
(Switch gear & Protection)
Subject Code : BTEE-602
M.Code : 71148

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. **Answer briefly :**

   (a) Write the importance of ground wire.

   (b) Write the difference between the fuse and circuit breaker.

   (c) Define the operating time of circuit breaker.

   (d) Enumerate the concept of ring feeder.

   (e) List out the different types of distance relay.

   (f) What do you mean by inrush phenomenon in Transformation?

   (g) What is a directional relay?

   (h) What are the causes of over voltages?

   (i) What is meant by current chopping?

   (j) Define plug setting multiplier.

SECTION-B

2. Briefly describe the different types of testing schemes of circuit breakers.

3. Explain the method to overcome the magnetizing current inrush using Harmonic Restraint method.

4. Explain the directional unit incorporated in an over current relay with neat Diagram.

5. Describe the principle of high impedance differential protection based on Voltage drop.

6. Draw the block diagram of static definite time over current relay and discuss its operation.

SECTION-C

7. A generator is protected by restricted earth fault protection. The generator ratings are 13.2 kV, 10 MVA. The percentage of winding protected against phase to ground fault is 85%. The relay setting is such that it trips for 20% out of balance. Calculate the resistance to be added in the neutral to ground connection.

8. A 3 phase 200 KVA, 11/0.4 kV transformer is connected as delta/ star. The protective transformer on the 0.4 kV side have turn ratio of 500/5. What will be the CT ratio on the high voltage side? Also obtain the circulating current when the fault of 700 A of the following types occur on the low voltage side

   (a) Earth fault within the protective zone

   (b) Earth fault outside the protective zone.

9. Discuss the phenomenon of :

   (a) Current chopping

   (b) Capacitive current breaking

   (c) Resistance switching

   (d) Restriking voltage.

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC against the Student.