Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (EE) (2019 Batch) (Sem.–2)

DIGITAL PROTECTION OF POWER SYSTEM

Subject Code : MTEE-202-18

M.Code : 76101

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

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

1. What are the benefits that can be gained from digital protection relay? Explain the basic structure of digital protection relay.

2. a) Use the least square to fit a straight line for the points (2,2), (5,4), (6,6), (9,9) and (11,10) assuming that error in x and y are of same order of magnitude.

   b) Let us assume that it is required to find the smoothed value for a measured three-point data set using linear equations. Let the measured data be denoted by (x_1, y_1), (x_2, y_2), (x_3, y_3). Explain the process to fit a linear equation.

3. What are the problems in protection of long and heavily loaded two or multi-terminal lines? Explain any current based differential protection scheme.

4. Derive the relationship between fourier and walsh coefficients.

5. With the help of diagram explain basic components of a digital protection scheme.

6. Give the mathematical formulation of first and second derivative method.

7. For A/D conversion for digital protection scheme explain Dual slope converter and parallel-comparator converter.

8. How fundamental and second harmonic components of transformer current can be extracted with finite - duration impulse response based filter?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.