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

Total No. of Questions : 08

M.Tech. (Electrical Power System) (2018 Batch)   (Sem.–2)

DIGITAL PROTECTION OF POWER SYSTEM

Subject Code : EEPS-201-18
M.Code : 76081

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. a) What are the advantages of using digital techniques in power system protection?   6

   b) What is the use of Non-Recursive digital filter in digital protection system?   6

2. a) Explain typical model of A/D converter with suitable block diagram.   6

   b) Define interpolation and curve fitting. Explain backward, central and forward difference interpolation.   6

3. a) Describe Walsh function in detail with suitable example.   4

   b) Draw and explain the block diagram for :

   i) Numerical overcurrent relay

   ii) Numerical differential protection   8

4. a) Explain Fourier algorithm with sub cycle data window.   6

   b) Write the flow chart for simple relay program.   6

5. a) Explain Mann-Morrison technique for numerical relaying algorithms.   6

   b) List the benefits and limitations of a fuse protection over relay-based protection. Be precise.   6

6. a) Explain the following :

    i)   Signal aliasing

    ii) Sample and hold circuit

    iii) Sampling theorem

    iv) Least square method   12

7. a) Explain the distance protection algorithm based on travelling waves.   8

    b) How sampling is done for digital power system protection? Draw the spectrum of a sampled signal.   4

8. a) Why scaling of voltage signals for input to digital relay is necessary? Explain how it can be achieved by using potential divider.   6

    b) Write some recent advances in digital protection of power system.   6

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.