PEPS22 - Advanced Power System Protection

P. Pages : 1

Time : Three Hours

1252

GUG/S/23/11022

Max. Marks : 70

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Notes : 1. All questions carry equal marks.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Diagrams and Chemical equation should be given wherever necessary.
5. Illustrate your answers wherever necessary with the help of neat sketches.
6. Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted.
7. I.S. Hand Book for structural steel section, I.S. Code 8000/1962 or 1964, I.S. 456 (Revised), I.S. 875 may be consulted.
8. Attempt **any five** questions.
9. Use of non-programmable calculator is permitted.

1. a) Explain the performance and operational characteristics of digital protection. **7**

b) State and explain merits of digital protection. **7**

2. a) Define the term data window. State the advantages and disadvantages of half cycle window. **7**

b) Explain in detail analog and digital multiplexer. **7**

3. a) Write short note on digital filters. **7**

b) Explain the phenomenon of aliasing & principle of multiplexing in digital relay. **7**

4. a) Explain with block diagram ultrahigh speed wave difference scheme. **7**

b) Explain digital line differential protection. **7**

5. a) Draw & explain block diagram of an FIR & IIR filter. **7**

b) Explain the statement that all digital relay's have the same hardware but what distinguishes the relay is the software used. **7**

6. a) With the help of block diagram explain analogue to digital conversion and explain any one method converting analog to digital signal form. **7**

b) Discuss forward backward and central difference interpretation. **7**

7. a) Explain digital differential protection of transformer. **7**

b) Explain how fundamental and second harmonic components are extracted using FIR filter. **7**

8. a) Explain recent developments in the field of digital power system protection. **7**

b) Explain frequency modulation current differential protective scheme with its relay characteristics. **7**

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