Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

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B.Tech. (Electronics & Electrical) (2013 Onwards)
B.Tech. (Electronics & Electrical) (2011 Onwards) (Sem.–5)

POWER SYSTEM – II

Subject Code : BTEEE-502
M.Code : 70567

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS 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 any four application of isolator.

b. Define the following terms : pick-up, reset.

c. Define the theory of arc interruption.

d. Write any four application of negative sequence relay.

e. Define the impulse gap and its advantages.

f. Define the surge Absorber.

g. Define the line trap unit and coupling unit.

h. Write any two functions of Metal oxide arrestor.

i. Write any four dielectric property of SF_6 gas.

j. Write any four differences between DC and AC networks.

SECTION-B

2. Name the parts and explain the operation of the circuit breaker during the fault clearing.

3. Explain the principle, types and application of thermal relay.

4. In 50 Hz. Overhead line the capacitance of one line to earth was 1.5 micro farad. It was decided to use an earth fault neutralizer. Calculate the reactance neutralize the capacitance of :

   a. 100% of length line

   b. 90% of length line

   c. 95% of length line

5. Explain the phase comparison method of carrier current protection.

6. Explain the Buchholz relay with reference to limitations and difficulties.

SECTION-C

7. A 30 MVA, 11.5 KV, star- delta power transformer is to be protected by differential protection. The high voltage side phase lags behind low voltage side phase by 30°. Formulate the complete differential protection for the transformer by selecting CT ratios, CT connections. The continuous current carrying capacity of restraining coils of the differential relay should not exceed 5 Amp. CT ratio is 3000/5 on 11.5 Kv side. Determine CT ratio on 69 kV side.

8. Shows in detail, the protection arrangement of a 60MW generator provided with :

   a. Differential protection.

   b. Back-up over current protection through faults.

9. Draw the layout of substation and explain its main equipment in detail.

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.