6E3111

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B.Tech. VI Semester (Back) Examination, April-May, 2017

Electrical & Electronics Engg.

6EX3(O) Protection of Power System

EE, EX

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) Explain functional characteristics of a relay with suitable diagram. (8)

   b) Define zone of protection, primary and back up protection. (8)

OR

1. a) What are current transformers? Discuss transient errors available in CT. (8)

   b) Explain steady state ratio and phase angle errors in PTs. (8)

Unit-II

2. Discuss the following parameters for over current relays - (16)

   a) Instantaneous time

   b) Definite time

   c) Inverse time

   d) Time and current Grading

OR

2. Give brief description of over current protective schemes for a feeder. (16)

Unit-III

3. a) Differentiate between differential and percentage differential protection. **(8)**

   b) Discuss unbalanced stator currents. **(8)**

OR

3. a) Explain the mechanism of Rotor protection against excitation and prime mouer failure. **(10)**

   b) Define field earth fault. **(6)**

Unit-IV

4. a) What is Buchholz relay. Discuss its working with suitable diagram. **(8)**

   b) What do you mean by percentage differential protection. **(8)**

OR

4. Discuss the following parameters for Bubar protection- **(16)**

   a) High impedance relay scheme

   b) Frame leakage protection

Unit-V

5. a) Explain the working of induction cup type reactance and mho relays. **(8)**

   b) List out the faults and abnormal operating conditions for induction motor. **(8)**

OR

5. Discuss the construction, operating principle and characteristics of an electromagnetic impedance relay. List out the effects of arc resistance. **(16)**