Printed Pages : 3   **TEE701**

(Following Paper ID and Roll No. to be filled in your Answer Book)
PAPER ID : 0200   Roll No.

B.Tech

(SEM VII) ODD SEMESTER THEORY EXAMINATION 2009-10
SWITCHGEAR & PROTECTION

Time : 3 Hours]   *[Total Marks : 100*

Note :   *Attempt all questions.*

1   Attempt any **four** of the following :   5×4=20

(a)   "Relay is the brain of protection". Justify this statement using trip circuit.

(b)   Describe about primary and backup protection. What is meant by time graded over current protection ?

(c)   Discuss about any four major qualities a relay should possess.

(d)   Draw a neat diagram of gas actuated relay. What is its location and use in the device ?

(e)   Discuss about wattmetric type induction disc relay in detail.

(f)   Define the following :

(i)   Pick-up

(ii)   Drop out

(iii) Reset

(iv)   Interlock

(v)   Blind spot.

JJ-0200]   1   **[Contd...**

2 Attempt any **two** of the following : 10×2=20

(a) Discuss about phase and amplitude comparators in detail.

(b) What is a distance relay ? Draw its characteristics. How is directional feature added with over current relays ? Why is it required ?

(c) Compare a static relay with electromagnetic relays.

3 Attempt any **two** of the following : 10×2=20

(a) Describe different types of distance relays used for protection of transmission lines. Which one is the best and why ?

(b) Describe pilot wire protection, its merits and demerits in detail.

(c) How is a bus bar protected ?

4 Attempt any **two** of the following : 10×2=20

(a) What are the problems associated with short line interruption ? How is the problem eliminated ?

(b) Describe about the direct and indirect testing procedure for a circuit breaker.

(c) Discuss about RRRV. Draw a neat diagram to show the voltages and current during relay and circuit breaker operations. Discuss about active recovery voltage, relay operating time, circuit breaking time and circuit making time.

5 Attempt any **two** of the following : 10×2=20

(a) Describe the construction and operation of a minimum oil circuit breaker.

(b) Draw appropriate diagrams to show the complete operation of a sf_6 circuit breaker. Give the merits of sf_6 circuit breakers.

(c) Give a complete protection scheme for Alternator.