P131

APR. -16/BE/Insem. - 34

B.E (Electrical)
SWITCH GEAR & PROTECTION
(2012 Course) (Semester - II)

Time : 1Hour] *[Max. Marks :30*

Instructions to the candidates:
1) *Use of non programmable calculator is allowed.*
2) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
3) *Figures to the right indicate full marks.*
4) *Assume suitable data if necessary.*

Q1) a) Draw and explain trip circuit of a circuit breaker. **[4]**

b) Explain construction & working of non- directional overcurrent relay. **[6]**

OR

Q2) a) Write a note on evolution of protective relaying. **[4]**

b) An IDMT type overcurrent relay is used to protect a feeder through 500/1ACT. The relay has PSM of 125% and TSM = 0.3. Find the time of operation of the said relay if a fault current of 5,000A flows through the feeder. Make use of the following characteristic. **[6]**

PSM	2	3	5	8	10	15
Time for unity TSM (100% current = 1A)	10	6	4.5	3.2	3	2.5

Q3) a) A 50Hz, 13.8kV. three phase generator with grounded neutral has an inductance of 15 mH/ph and is connected to a busbar through a CB. The capacitance to earth between the generator and the CB is 0.05μF/ph. Determine the following: **[6]**

i) Maximum restriking voltage

ii) Time for maximum restriking voltage

iii) RRRV

iv) Frequency of oscillations

Neglect the resistance of generator winding.

b) Define restriking voltage & RRRV. **[4]**

OR

P.T.O.

Q4) a) Explain current chopping phenomenon in detail. **[6]**

   b) What is resistive switching? Explain its importance. **[4]**

Q5) a) State and define ratings of CB. **[4]**

   b) Explain construction and working of VCB. **[6]**

<div align="center">OR</div>

Q6) a) Explain what is autoreclosing. **[4]**

   b) Explain construction and working of a puffer type SF6 CB. **[6]**

<div align="center">ℰ ℰ ℰ</div>