B.E (Elect.) VII (Rev.) 19/5/07

ws May 07-121

Protection & switchgear Engg

Con. 2468–07. **(REVISED COURSE)** ND–8027

(3 Hours) **[Total Marks : 100**

MAY 07

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** out of remaining **six**.
(3) Assume **suitable** data wherever **required**.

1. (a) Explain resistance switching. 20
(b) Static relays and their advantages, disadvantages.
(c) Explain the properties of SF_6 Gas.
(d) Explain the meaning of time–grading and current–grading used in protection system.

2. (a) Draw a schematic for motor protection against single phasing and explain in brief. 10
(b) An 11 KV, 100 MVA, generator is grounded throuh a resistance of 6 ohm. The C.T.S. have a ratio of 1000/5. The relay is set to operate when there is an out of balance current of IA. What percentage of the generator winding will be protected by the percentage differential scheme of protection. 10

3. Write short notes on (any **two**) :– 20
(a) Different protection used for transmission line.
(b) Construction and working of MOCB.
(c) Amplitude and phase comparators.

4. (a) Explain IDMT charateristics and working principle of induction disc relay. 10
(b) Explain clearly the difference between impedance relay, reactance relay and MHO relay with the help of their characteristics. 10

5. (a) Explain the constructional details of HRC Fuse. State the advantages of using HRC fuse. How arc is extinguished in HRC fuse. 10
(b) Explain with the help of neat diagram primary and back up protection. What is relay back up and breaker back up ? 5
(c) Discuss in brief different ratings of circuit breaker. 5

6. (a) Discuss the operation of Buchholz's relay for transformer protection. 10
(b) Explain the construction and working of vacuum circuit breaker. 10

7. Write short notes on any **two** :– 20
(a) Different protection used for alternators
(b) Minimum oil circuit breaker.
(c) Restricted earth fault protection for generator.
