C 60565

(Pages : 2)

Name.....

Reg. No.....

EIGHTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, APRIL 2014

EE 09 802—POWER SYSTEM PROTECTION AND UTILISATION

Time : Three Hours

Maximum : 70 Marks

Part A

Answer **all** *questions.*
Each question carries 2 *marks.*

1. (a) Explain primary protection and back up protection.

   (b) Discuss the different circuit breaker ratings.

   (c) Explain Insulation co-ordination.

   (d) Explain any one amplitude comparators.

   (e) What are the different current collection schemes in electric traction ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*
Each question carries 5 *marks.*

2. (a) Explain any *one* protection scheme of generators.

   (b) What are the causes of over voltages in power systems.

   (c) Explain the block diagram of sampling comparators.

   (d) Explain the coefficient of reflection and refraction.

   (e) Explain the mechanics of traction.

   (f) Explain the different types of resistance heating methods.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*
Each question carries 10 *marks.*

3. Explain the construction and operation of Buchholz relay for the protection of transformers.

Or

4. Draw neat sketches for illustrating the principle of circulating current differential protection. Indicate polarities of CT's and direction of currents for internal faults.

Turn over

5. With the help of neat sketch, explain the construction, principle of operation and working of SF6 Circuit breaker with its merits and demerits.

Or

6. Explain the phenomenon of arcing grounds. How does the neural earthing eliminate arcing grounds ?

7. With a neat diagram, explain the block diagram of static impedance relay and microprocessor impedance relay.

Or

8. Explain the reflection and Transmission of Waves at transition points.

9. A schedule speed of 45 kmph is required between 2 stops 1.5 km apart. Find the maximum speed over the run if the stop is 20 secs duration. The values of acceleration and retardation are 2.4 kmphps and 3.2 kmphps respectively. Use a simplified Trapezoidal speed time curve, also determine the time of acceleration, free run and retardation.

Or

10. Explain with help of relevant diagram, the working of vertical core type of induction furnace.

(4 × 10 = 40 marks)