



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

**PAPER ID : 121701**

Roll No.

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## B. Tech.

(SEM. VII) (ODD SEM.) THEORY  
EXAMINATION; 2014-15

### SWITCHGEAR AND PROTECTION

Time : 3 Hours]

[Total Marks : 100

- 1 Attempt any **FOUR** parts : **5×4=20**
- a) What are the different types of faults occurring in the power system?
  - b) Write the importance of ground wire
  - c) List out the different types of distance relay.
  - d) Write the merits of static relay.
  - e) Enumerate the concept of ring feeder
  - f) How do you quench an arc in a circuit breaker?
- 2 Attempt any **TWO** parts : **10×2=20**
- a) Explain the importance of protective schemes employed in power system.
  - b) Write the essential qualities of protection
  - c) Explain the protective schemes employed to protect formulating and switching effects

- 3** Attempt any **TWO** parts : **10×2=20**
- a) Enumerate the basic concepts of insulation coordination
  - b) Explain the construction and operating principle of over current relay with directional Scheme.
  - c) Describe the principles of :
    - (i) Negative sequence relay.
    - (ii) Under frequency relay.
- 4** Attempt any **TWO** parts : **10×2=20**
- a) With a neat schematic diagram, explain the protection of transformer with differential Protection scheme.
  - b) Write brief notes on :
    - (i) Generator protection.
    - (ii) Bus bar protection.
  - c) Explain the physics of arc phenomena and interruption.
- 5** Attempt any **TWO** parts : **10×2=20**
- a) Describe the operating principle of DC circuit breaker.
  - b) Write short notes on :
    - (i) Current chopping.
    - (ii) Interruption of capacitive current.
  - c) With a help of neat block diagram, explain the construction, operating principle and advantages of SF6 circuit breaker.
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