

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

ELECTRICAL POWER UTILIZATION & SYSTEM PROTECTION

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Define prospective current of a fuse.
2. Define re-striking voltage.
3. State soil resistivity.
4. State the Faraday's Laws of electrolysis.
5. Define electric drives.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Explain working of oil circuit breaker.
2. Differentiate between fuse and circuit breaker.
3. State the basic requirements of protective relay system.
4. State and explain the operation of Lightning arrester.
5. Explain the advantages of electric heating.
6. State the advantages and disadvantages of group drive.
7. List and explain the factors effecting specific energy consumption.

(5×6 = 30)

PART — C
(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain with neat sketch construction and working of HRC fuse. 8
(b) Explain different arc extinction methods adopted in a circuit breaker. 7

OR

- IV (a) Explain with neat sketch construction and working of Vacuum Circuit Breaker. 8
(b) State the advantages and disadvantages of HRC fuse. 7

UNIT — II

- V (a) Explain with neat sketch the principle of operation of attracted armature type relay and solenoid type relay. 8
(b) Explain different methods of neutral earthing. 7

OR

- VI (a) Explain with neat sketch working of Buchholz relay. 8
(b) Explain with neat sketch principle of operation of induction type over Current relay. 7

UNIT — III

- VII (a) Explain with neat sketch Direct and Indirect resistance heating. 8
(b) Explain the field of applications of electrolysis. 7

OR

- VIII (a) Explain with neat sketch Direct and Indirect arc furnace. 8
(b) Explain principle and applications of spot and seam welding. 7

UNIT — IV

- IX (a) Sketch the speed time curve of electric traction system and explain the different regions. 8
(b) Explain the advantages of electric braking. 7

OR

- X (a) Explain the method of regenerating braking of DC shunt and series motor. 8
(b) Explain the advantages of electric traction. 7
