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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

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 fusing factor.
2. Define the circuit breaker.
3. What is selectivity of relay ?
4. What is electro plating ?
5. Define electric traction. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. List the advantages of SF6 circuit breaker.
2. With neat sketch explain horn gap lightning arrestor.
3. Explain the classification of relay based on construction and principle.
4. Explain different heat transfer methods.
5. List any six applications of dielectric heating.
6. What are the advantages of electric braking ?
7. List the disadvantages of electric traction. (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Compare fuse and circuit breaker. 8

(b) Explain with neat sketch the working of Vacuum Circuit Breaker. 7

OR

IV (a) List the factors responsible for maintenance of arc in a circuit breaker. 7

(b) With neat sketch explain the construction of HRC fuse. 8

UNIT — II

V (a) With neat sketch explain working of directional over current relay. 8

(b) List the advantages of neutral grounded systems. 7

OR

VI (a) With neat sketch explain the construction and working of Bucholz relay. 8

(b) Explain with neat sketch solid grounding. 7

UNIT — III

VII (a) List the requirements good heating element. 7

(b) With neat sketch explain spot welding. 8

OR

VIII (a) Explain direct and indirect resistance heating. 8

(b) What are the different applications of electrolysis ? 7

UNIT — IV

IX (a) Explain group drive and also mention their merits. 7

(b) With neat sketch explain plugging in series and shunt motor. 8

OR

X (a) Draw the block diagram of electric drive and explain. 8

(b) List the requirements of traction motors. 7