TED (10)- 4040
(Revision- 2010)

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Reg.No………………...........
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE –APRIL-2021.

POWER SYSTEM PROTECTION

(Maximum Marks : 100) [Time : 3 hours]

PART–A

(Maximum Marks : 10)

Marks

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

1. Define fusing current.
2. Explain prospective current of fuse.
3. Explain making capacity of circuit breaker.
4. Define protective relay.
5. Explain voltage surge.

(5x2=10)

PART - B

(Maximum Marks : 30)

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

1. Factors affecting current carrying capacity of a fuse element.
2. Describe phenomenon of arc in circuit breaker.
3. Explain working of vacuum circuit breaker
4. Explain primary and backup protection with necessary diagrams.
5. Explain the principles of inverse time relay and inverse definite minimum time lag relay.
6. Explain working of sphere gap arrester with neat sketches.
7. Explain advantages of neutral grounding.

(5x6 =30)

PART - C

(Maximum Marks : 60)

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

UNIT I

III (a) Describe current rating, fusing factor, cutoff current and arcing time of a fuse. (8)

(b) Explain the classification of fuse. (7)

OR

IV (a) Explain construction and working of HRC fuse with neat sketches. (8)

(b) Write the advantages of fuse. (7)

UNIT- II

V (a) Explain the working of SF6 circuit breaker with neat sketches. (8)

(b) Explain principles of arc extinction. (7)

OR

VI (a) Describe the working of air blast circuit breaker. (8)

(b) Define the following terms

(i) Recovery voltage of CB (ii) Re-striking voltage of CB

(iii) Current chopping (iv) breaking capacity of CB (7)

UNIT- III

VII (a) Illustrate the working of an attracted armature type electromagnetic relay (8)

(b) Describe basic relay circuit with the help of neat diagram. (7)

OR

VIII (a) Draw and explain working of directional over current relay. (8)

(b) State and explain basic requirements of protective relaying. (7)

UNIT – IV

IX (a) Explain merz-prize protection of 3 phase transformers. (8)

(b) Describe the different apparatus used in power stations and substations. (7)

OR

X (a) Explain working of rod gap lightning arrester. (8)

(b) Draw and explain resistance grounding. (7)

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