

GENERATION, SWITCHGEAR AND PROTECTION

Time : 3 Hrs.

3K-ESN-11

Max. Marks : 100

Note:—

1. Part 'A' may be attempted in first 6 pages of Answer Sheet.
भाग 'क' के सभी उत्तर, उत्तर-पुस्तिका के प्रथम छ पृष्ठों में ही करने हैं।
2. Part 'B' may be attempted in rest of the Sheets of Answer Sheet.
भाग 'ख' के उत्तर, उत्तर-पुस्तिका के अगले शेष पृष्ठों में लिखिये।
3. Answers may be given in English or Hindi.
प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।

PART - A

1. Answer any ten questions.

(10x2=20)

- (a) What do you mean by relays?
- (b) What is Diversity factor?
- (c) What is demand factor?
- (d) What is RCCB?
- (e) What is a fuse?
- (f) What is the purpose of earthing?
- (g) What are the types of relays?
- (h) What is the cause of over voltage?
- (i) What is VCB?
- (j) Which gas is used in SF6 circuit breaker and why?
- (k) What is the function of ground wire?
- (l) Write two applications of MCB?
- (m) What is load factor?
- (n) What is the maximum efficiency of hydro power plant?

2. Attempt any five questions.

(4x5=20)

- (a) What is Merz-price protection?
- (b) Explain the working principle of cartridge fuse.

- (c) What is the purpose of protective gear?
- (d) What are the major conventional and non-conventional sources of energy?
- (e) What are the functions of isolator and circuit breaker?
- (f) What are the applications of Thyrite Arrester?
- (g) What is fault level?
- (h) What are the limitations of diesel power plant?

PART - B

Answer any three questions.

(20 x 3 = 60)

- 3. Draw layout and flow diagram of thermal power plant and explain operation of its various components.
- 4.
 - (a) Explain working of oil circuit breaker.
 - (b) Differentiate the function of switch, isolator and circuit breaker.
- 5.
 - (a) What are the different types of relays? Discuss thermal relay.
 - (b) Explain the concept of regional and national grid.
- 6.
 - (a) What are system earthing and equipment earthing?
 - (b) Define : Load estimation, Demand factor, Load factor, isolator and surge absorbers?
- 7.
 - (a) Explain the Merz Price protection of transformers.
 - (b) Draw the block diagram of Power Line carrier Communication (PLCC) and label it.