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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)

B.Tech III Year II Semester Regular Examinations May 2019

SWITCH GEAR AND PROTECTION

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

- 1 a** Explain the principle and operation of SF6 circuit breaker and its applications. 8M
b What are the special features of an auto reclosing circuit breaker? What are its advantages? 4M

OR

- 2** Write short notes on the following. 12M
 (i) Define circuit breaker. (ii) What is recovery voltage?
 (iii) What is resistance -switching? (iv) Define current chopping.

UNIT-II

- 3 a** State the various applications of differential Protection? 4M
b Describe the construction and principle of attracted armature type relay? 8M

OR

- 4** What are various types of distance relays? Compare their advantages and disadvantages. 12M

UNIT-III

- 5 a** Explain with a neat diagram and the applications of the Merz-Price circulating current system to the protection of alternators. 8M
b What precautions must be taken in installing this system? 4M

OR

- 6** Explain earth fault protection for transformers. Discuss the different transformer faults. 12M

UNIT-IV

- 7 a** Explain over -current protection of feeders. 7M
b How is the protection system graded with respect to the time of operation of relays? 5M

OR

- 8 a** Discuss why duplicate bus bar system is used. 5M
b Explain the carrier current protection with neat sketch. 7M

UNIT-V

- 9 a** Explain the causes of over voltages in a power system. 7M
b Explain the phenomenon of insulation coordination in a power system. 5M

OR

- 10 a** Explain any two types of lightening arresters. 8M
b Explain clearly how the rating of a lighting arrester is selected. 4M

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