

**Reg. No:**

--	--	--	--	--	--	--	--	--

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech III Year II Semester Regular & Supplementary Examinations October-2020**

**SWITCH GEAR AND PROTECTION**

(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 60

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

**UNIT-I**

- 1 a Explain the principal of “ARC” extinction. 6M  
b What are the different methods of “ARC” extinction? 6M

**OR**

- 2 Explain the principle and operation of SF6 circuit breaker. 12M

**UNIT-II**

- 3 a Explain the construction of an induction disc relay. State its principle of operation. What are the advantages to induction relays? 6M  
b With a neat sketch, Explain the difference between over current relays by using Time current characteristics. 6M

**OR**

- 4 a Explain the principle of Mho distance relay and explain its characteristics on R-X planes? 6M  
b Give the advantages and disadvantages of Microprocessor relays? 6M

**UNIT-III**

- 5 a Explain scheme of protection for failure of alternator excitation? 6M  
b Discuss about Earth fault protection for Alternator? 6M

**OR**

- 6 With the help of neat sketches explain the protection of star-delta power transformer, against the following abnormal conditions. 12M  
i) Phase to phase faults.  
ii) High voltage surges.

**UNIT-IV**

- 7 With neat sketch Explain the Merze price voltage balance systems in 3-Phase line. 12M

**OR**

- 8 a Explain the protection of Ring main feeder using over current relays. 6M  
b What are the advantages and disadvantages of carrier-current protection? 6M

**UNIT-V**

- 9 Explain clearly how the rating of a lightning arrester is selected? What is the best location of lightning arrester and why? 12M

**OR**

- 10 a Explain about Horn gap Arrester. And also give the advantages and disadvantages. 6M  
b Explain about lightning absorbers and diverters. 6M

\*\*\* END \*\*\*