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

**B.Tech III Year II Semester Supplementary Examinations July-2021**

**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 What is Switch gear? Explain various switch gear components. 6M  
b Explain about Axial blast Circuit breaker. 6M

**OR**

- 2 a Explain the principal of "ARC" extinction. 6M  
b What are the different methods of "ARC" extinction? 6M

**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 various types of construction of attracted armature type relay? 6M  
b Explain the principle of impedance type distance relay and explain its characteristics on R-X planes? 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 a Discuss the different transformer faults. 6M  
b What are the various protections schemes available for transformers? Explain any one protective scheme. 6M

**UNIT-IV**

- 7 a What is the importance of Bus bar protection? 8M  
b What is back-up protection of bus bar? 4M

**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 a Explain the construction & principle of operation of valve type lightning arrester. 6M  
b What is voltage surge? Draw typical lightning voltage surge. 6M

**OR**

- 10 a Explain about Horn gap Arrester. And also give the advantages disadvantages. 6M  
b Explain about Expulsion type Lightning Arrester. And also give the advantages and disadvantages. 6M

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