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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**

(AUTONOMOUS)

**B.Tech III Year II Semester Supplementary Examinations March-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 Write short notes on the following. 12M  
(i) Resistance switching.  
(ii) Current chopping.

**UNIT-II**

- 3 a Explain in detail about primary and back up protection. 6M  
b What are the advantages of induction cup relays? What is the purpose of shading in an induction disc relay? 6M

**OR**

- 4 a Derive the expression for torque developed in induction relay. 6M  
b What is Static relay? What are the advantages and disadvantages of static relay? 6M

**UNIT-III**

- 5 A 3-phase transformer rated for 33 KV/6.6KV is connected star-delta and the protecting Current transformer on the low voltage side has a ratio of 400/5. Determine the ratio of the current transformer on the HV side. 12M

**OR**

- 6 Explain with a neat sketch, the operation of Buchholz relay. 12M

**UNIT-IV**

- 7 With neat Diagram Explain the Three zone distance protection in 3-Phase transmission line. 12M

**OR**

- 8 Write short notes on the following: 12M  
i) Fault bus protection.  
ii) Tran slay scheme.

**UNIT-V**

- 9 Explain the protection of stations and sub-stations against direct lightning strokes with neat schematic diagram. 12M

**OR**

- 10 a Explain about Rod gap Arrester. And also give the advantages disadvantages. 6M  
b What is voltage surge? Draw typical lightning voltage surge. 6M

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