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

B.Tech IV Year I Semester Regular Examinations February-2022

POWER SYSTEM PROTECTION
(Electrical & Electronics Engineering)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|---|---|--|----|----|
| 1 | a | What is RRRV? | L1 | 2M |
| | b | What is differential protection? | L2 | 2M |
| | c | Mention different types of faults occur in generators. | L3 | 2M |
| | d | State the types of faults in power system. | L4 | 2M |
| | e | What is the significance of insulation Co-ordination? | L5 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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|---|---|--|----|----|
| 2 | a | Discuss the different methods of "ARC" extinction. | L1 | 5M |
| | b | Explain the operation of Minimum oil Circuit Breaker with diagram. | L2 | 5M |

OR

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|---|---|---|----|----|
| 3 | a | Explain the principle of ARC extinction. | L1 | 5M |
| | b | Discuss the operating principle of SF6 circuit breaker with a neat diagram. | L2 | 5M |

UNIT-II

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|---|---|---|----|----|
| 4 | a | Explain the constructional details and operation of attracted armatures relay. | L1 | 5M |
| | b | Explain working of microprocessor based over current relay with suitable diagram. | L2 | 5M |

OR

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|---|---|---|----|----|
| 5 | a | Explain in detail about primary and back up protection. | L1 | 5M |
| | b | Explain differential relay in detail. | L2 | 5M |

UNIT-III

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|---|---|--|----|----|
| 6 | a | Discuss the different types of transformer faults. What are various protective schemes available for transformers? | L1 | 5M |
| | b | Explain internal faults inside the transformer. | L2 | 5M |

OR

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|---|---|--|----|----|
| 7 | a | Explain the working principle of Buchholz relay with neat diagram. | L1 | 6M |
| | b | Discuss earth fault protection for transformers. | L2 | 4M |

UNIT-IV

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|---|---|---|----|----|
| 8 | a | Explain in detail about the Merz price voltage balanced system with a neat single line diagram. | L1 | 6M |
| | b | Describe in detail the protection of parallel feeder and ring mains. | L2 | 4M |

OR

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|---|---|---|----|----|
| 9 | a | Discuss the importance of Bus bar protection. | L1 | 5M |
| | b | Write short note on Tran slay scheme. | L2 | 5M |

UNIT-V

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|----|---|---|----|----|
| 10 | a | Explain the working of valve type lightning arrester. | L1 | 5M |
| | b | Write short note on causes of over voltages in power systems. | L2 | 5M |

OR

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|----|---|---|----|----|
| 11 | a | With a neat diagram, explain the operation of any one type of lightning arrester. | L1 | 5M |
| | b | What is horn gap arrester? Explain how it works. What is the purpose of inserting a Resistance? | L2 | 5M |

END