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

B.Tech III Year II Semester Regular Examinations July-2021

POWER SYSTEMS - II

(Electrical and 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 Define bus incidence matrix. | L1 | 2M |
| | b What is per unit system? | L1 | 2M |
| | c Define power flow studies. | L1 | 2M |
| | d Write any two differences between Gauss-seidel and Newton-raphson method. | L1 | 2M |
| | e Write down the Swing equation. | L1 | 2M |

PART-B

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

UNIT-I

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| 2 | What is a primitive network and represent its forms? Prove $Y_{BUS} = AT [y] A$ using singular transformation. | L1 | 10M |
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OR

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|----------|--|-----------|------------|
| 3 | Form the YBUS by using singular transformation for the network shown below. Including the generator buses. | L3 | 10M |
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UNIT-II

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| 4 | a Explain about Short Circuit KVA and short-circuit current. | L2 | 5M |
| | b Explain about types of reactors briefly. | L2 | 5M |

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| 5 | a Derive an expression for the fault current for the LG fault. | L3 | 5M |
| | b Derive an expression for the fault current for the LL fault | L3 | 5M |

UNIT-III

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| 6 | a Derive and explain about static load flow equations. | L3 | 5M |
| | b Explain the data for Load flow studies. | L3 | 5M |

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| 7 | a What is load flow analysis? What is the necessity for load flow studies? | L1 | 5M |
| | b State limitations of Gauss Seidel method. | L1 | 5M |

UNIT-IV

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| 8 | a Explain about Decoupled Load Flow Method. | L2 | 5M |
| | b List Comparison of Gauss-Seidel & Newton Raphson Method. | L3 | 5M |

OR

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| 9 | a Explain about Fast Decoupled Load Flow Method. | L2 | 5M |
| | b What are the Comparisons of Decoupled & Fast Decoupled Methods? | L1 | 5M |

UNIT-V

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|-----------|---|-----------|-----------|
| 10 | a State and derive swing equation. | L1 | 5M |
| | b What are the applications of equal area criterion? | L1 | 5M |

OR

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| 11 | a What is steady state stability and steady state stability limit? | L1 | 5M |
| | b Discuss the various methods of improving steady state stability. | L1 | 5M |

END