

Reg. No:

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

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

B.Tech III Year II Semester Supplementary Examinations March-2021

POWER SYSTEM ANALYSIS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

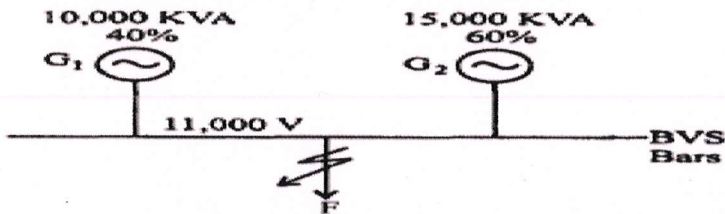
- 1 What is incidence matrix? Explain about formation of Following Incidence matrix. 12M
Bus incidence matrices B. Basic loop incidence matrices C. Cut set incidence matrix.

OR

- 2 Define the following with suitable examples: 12M
i) Branch and Links
ii) Loops and cut sets
iii) Tree and Co-tree

UNIT-II

- 3 Consider the system shown in Fig below the percentage reactance of each alternator is expressed on its own capacity determine the short circuit current that will flow into a dead 3- phase short circuit at F.



12M

OR

- 4 a Define per unit system and advantages of per unit system? 6M
b How are reactors classified? Explain the merits and demerits of different types of system protection using reactors. 6M

UNIT-III

- 5 Explain the flow chart for Gauss- Seidel method without PV buses. 12M

OR

- 6 Explain the flow chart for NR method without PV buses. 12M

UNIT-IV

- 7 a Discuss the various methods of improving steady state and transient state stability. 6M
b Explain the Factors affecting the Transient stability. 6M

OR

- 8 a Derive and explain how to determine of transient stability by equal area criterion. 6M
b What are the essential factors for stability problems? 6M

UNIT-V

- 9 Derive and explain about Synchronous power coefficient. 12M

OR

- 10 Explain and derive the equation for steady state power by using ABCD parameters. 12M

*** END ***