

	<table border="1"> <thead> <tr> <th>Bus Code</th> <th>Line Impedances</th> </tr> </thead> <tbody> <tr> <td>1-2</td> <td>j1</td> </tr> <tr> <td>1-4</td> <td>j0.2</td> </tr> <tr> <td>2-3</td> <td>j0.8</td> </tr> <tr> <td>3-4</td> <td>j0.4</td> </tr> </tbody> </table>	Bus Code	Line Impedances	1-2	j1	1-4	j0.2	2-3	j0.8	3-4	j0.4		
Bus Code	Line Impedances												
1-2	j1												
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B)	Write short note on types of buses in power flow problem.	Understand	6										
C)	Explain the Gauss Seidel method of load flow analysis.	Understand	6										
Q. 3	Solve Any Two of the following.		12										
A)	Explain different types of faults in a power system. Also explain the causes and effects of faults.	Understand	6										
B)	Derive the expression for transient current on a transmission line.	Application	6										
C)	Derive the expressions of positive, negative and zero sequence voltage components of given set of unbalance voltage phasors V_a , V_b and V_c .	Application	6										
Q.4	Solve Any Two of the following.		12										
A)	The voltages of a three phase system in volts are: $V_a=400+j200$, $V_b=400-j400$, $V_c=200+j800$. Calculate the symmetrical components of the voltage.	Application	6										
B)	Define harmonics. Explain the causes and effects of harmonics in a power system.	Understand	6										
C)	What is load dispatch center? Explain the functions of load dispatch center.	Understand	6										
Q. 5	Solve Any Two of the following.		12										
A)	Draw a diagram showing interconnection of sequence network for single line to ground fault. Derive the equation for fault currents.	Application	6										
B)	An 11kV, 25MVA synchronous generator has positive, negative and zero sequence reactances of j0.12, j0.12 and j0.08 pu respectively. The generator neutral is solidly grounded. A line to ground fault occurs at the generator terminals. Determine the fault current in per unit and in Ampere. Assume that the generator was unloaded before the fault.	Application	6										
C)	Draw a diagram showing interconnection of sequence network for line to	Application	6										

	line fault. Derive the equation for fault currents.		
	*** End ***		

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