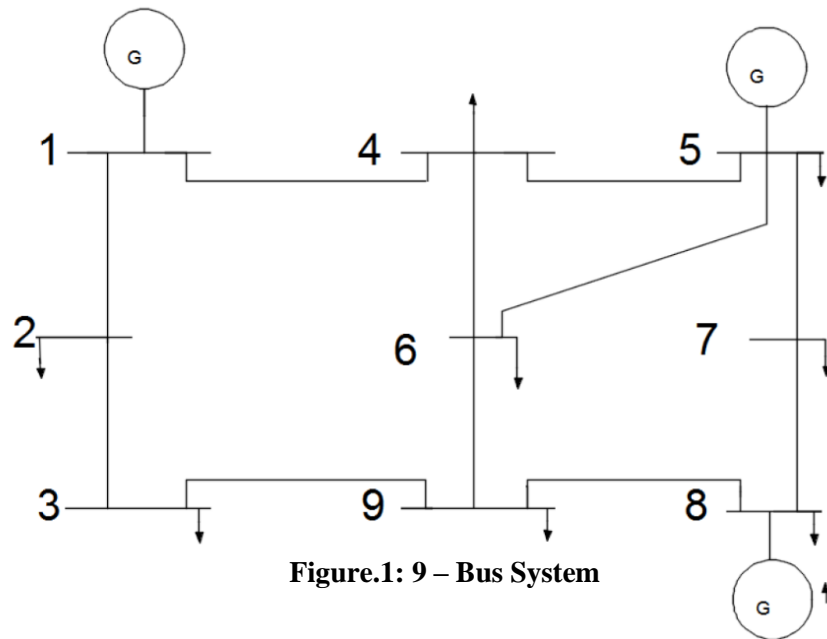


## IEEE 9 Bus System



**Figure.1: 9 – Bus System**

Table.1: Generators Reactance Data (100 MVA Base)

Item	Voltage(kV)	Reactance
Generator – 01	132 kV	0.05
Generator – 02	132 kV	0.08
Generator – 03	132 kV	0.10

Table.2: Lines Impedances Data (100 MVA Base)

Bus Code	Voltage(kV)	Resistance	Reactance	Admittance
1 – 2	132 kV	0.0180	0.054	0.0045
1 – 4	132 kV	0.015	0.045	0.0038
2 – 3	132 kV	0.018	0.056	0.00
3 – 9	132 kV	0.02	0.06	0.00
4 – 5	132 kV	0.013	0.036	0.003
4 – 6	132 kV	0.02	0.066	0.00
5 – 6	132 kV	0.06	0.03	0.0028
5 – 7	132 kV	0.014	0.036	0.003
6 – 9	132 kV	0.01	0.05	0.00
7 – 8	132 kV	0.032	0.076	0.00
8 – 9	132 kV	0.022	0.065	0.00

Table.3: Lines Rated MVA Loading Data

Item	Rated MVA
1 – 2	80
1 – 4	150
2 – 3	50
3 – 9	20
4 – 5	40
4 – 6	50
5 – 6	45
5 – 7	75
6 – 9	35
7 – 8	65
8 – 9	45

Table.4: Schedule of Active and Reactive Power (Per Unit)

Bus No.	Type	Generation		Load		V  Sched (PU)	$\delta^0$	Reactive Power Limit		Active Power Limit	
		P	Q	P	Q			$Q_{\min}$	$Q_{\max}$	$P_{\min}$	$P_{\max}/M_{\text{base}}$
1	Swing	-	-	0	0	1.03	$0^0$	-3.00	3.00	0	3.00
2	PQ	0	0	0.1	0.05	-	-	-	-	-	-
3	PQ	0	0	0.25	0.15	-	-	-	-	-	-
4	PQ	0	0	0.6	0.4	-	-	-	-	-	-
5	PV	0.8	-	0.1	0.05	1.06	-	-1.00	1.00	0.00	1.00
6	PQ	0	0	1.0	0.8	-	-	-	-	-	-
7	PQ	0	0	0.8	0.6	-	-	-	-	-	-
8	PV	1.2	-	0.4	0.2	1.01	-	-1.5	1.5	0	1.5
9	PQ	0	0	0.2	0.1	-	-	-	-	-	-