1. Derive the transmission line equation and hence obtain expressions for voltage and current on a transmission line
2. Explain in detail about the wave form distortion and also derive the condition for distortion less line.
3. Determine the following
   - (i) Standing wave Ratio (SWR)
   - (ii) Input Impedance and Transfer Impedance
   - (iii) Distance between of 300Ω and terminated in a load of 175+j207 Ω. An Electrical length of 200MHz is transmitted along the line in free space.
4. Derive the line constant of a zero dissipation line
5. Discuss in detail about lumped loading and derive the Campbell's equation.
6. Explain the different types of distortions in a transmission line and also derive the condition for distortion less transmission
7. Discuss the following: (i) Reflection loss (ii) Return loss?
8. Derive the expression for transfer impedance of a Transmission line.
9. What is SWR? Derive SWR in terms of reflection Coefficient?
10. Discuss the applications of smith chart with suitable illustrations
11. A 75Ω lossless line is to be matched with a 100 –j 80 Ω load using single stub. Calculate the stub length and its distance from the load corresponding to the frequency of 30 MHz using SMITH chart.
12. A 50Ω lossless feeder line is to be matched to an antenna with Z_L = (75– j 20)Ω at 100MHz using single shorted stub. Calculate the stub length and distance between the antenna and stub using SMITH chart.
13. A 30 m long lossless transmission line with characteristic impedance (Z0) of 50 Ω is terminated by a load impedance (ZL) =60 + j40 Ω. The operating wavelength is 90m. Find the reflection coefficient, standing wave ratio and input impedance using smith chart.
14. A lossless transmission line has a load of ZR/R0=(1+j1.2). Design Double Stub matching with a distance between two stubs are 3/8λ. Find location and length of stub1 and stub2 using smith chart