Subject: TL&N

Important questions:

1. Derive the expression for the characteristics impedance Z_0 attenuation constant alpha, velocity of propagation v_p and wavelength of a transmission line in terms of primary constant.
2. Define and difference phase and group velocity as applied t uniform transmission line.
3. Define the input impedance of the transmission line
4. Derive an expression for input impedance of a transmission line in terms of reflection co efficient.
5. Explain the reflection on transmission line
6. Discuss the frequency characteristics impedance of the input impedance.
7. Discuss the how measurement of input impedance can be used to locate a fault in a cable.
8. Define the following terms and their physical significance
   a) Attenuation b) characteristics impedance c)phase function
9. An open wire telephonic line has R=10 ohm per km L= 0.0037 henry per Km C= $0.0083*10^{-6}$ farad per km and G=$0.4*10^{-6}$ ohms per km. Determine its $Z_{0,a,\text{ and }B}$ at 1000hz
10. Explain fully skin effect? How it is overcome?
11. Draw the voltage and current variation along an open circuited and a short circuited line. Explain their nature
12. Discuss the variation of voltages and current on lossy line short circuited at the far end
13. Calculate the rms voltage and current at intervals of one eight wave length from the load upto a distance 5cm
14. Explain the what is meant by reflection co-efficient in transmission line
15. Construct the power circle diagram for the receiving end of the line whose equivalent pi network .
16. Calculate the inductance of multi-circuit angle phase line
17. Explain the term GMD and how it is useful in calculation of inductance of multi conductor system
18. Describe the methods used for loading telephone cable discussntheir merits and demerits.
19. Explain the standing wave ratio relating to a transmission line
20. Derive an expression for standing wave ration in terms of reflection coefficient in a lossess line

21. Lossless line of 100 ohms is terminated by a load which produces SWR=3. The first maximum is found to be occurring at 320cm if f=300mhz determine the load impedance.
22. What are advantage of the impedance matching on high frequency lines
23. Find the insertion loss by impedance and standing wave measurement method .
24. The VSWR was found to be2.0
25. What is a transmission line bridge? How will you use such a bridge for measurement of impedance.
26. Explain term of insertion loss
27. Enumerate the various types of modern transmission lines . in what respect they differ from each other
28. Give the design of a L- matching loss less newtwork to match 100ohm load to a 50 ohm souce at 5mhz.
29. If the transmission line having characteristics impedance of 632.8 ohms is connected to an antenna whose input impedance is 80 ohms, find the reflection loss
30. Find the sending end impedance of the line having negligible losses where z is 55 ohms receiving end impedance 155+j75 ohms and line is 13183 times the wave length.