

Sheet 2 – Voice over IP (VoIP) QoS

Question 1:

What are the VoIP QoS Impairment Parameters?

Question 2:

What is the MOS Standard for Measuring Call Quality?

Question 3:

What are the VoIP QoS Measurement Methodologies?

Question 4:

What are the VoIP QoS Measurement Methodologies in Subjective Methods?

Question 5:

What are the VoIP QoS Measurement Methodologies in Objective Methods?

Question 6:

Write the equation of E-Model and define its parameters.

Question 7:

Write the equation of E-Model assumption and define its parameters.

Question 8:

Build a VoIP Network with SIP Protocol using OPNET, the QoS tool used is E-Model. The objective function for all cases is to maximize the number of calls that can be active on a link while maintaining a minimum level of voice quality ($R > 70$).

The cases considered are:

- Find the optimal voice coder given link bandwidth, packet loss level, and background link utilization level.
- Find the optimal voice coder and the optimal packet loss level given link bandwidth and background link utilization.
- Find the optimal voice coder and the optimal background link utilization level given link bandwidth and packet loss level.