Transmitter Subsystem: ?1.Techniques like amplification, filtering, equalization, and error correction are? employed to mitigate these issues and ensure reliable communication.Signal Processing: Further signal processing techniques can be applied to enhance the quality and intelligibility of the message.This may involve noise reduction, echo cancellation, or audio/video enhancement algorithms, depending on the nature of the communication system.In summary, the transmitter subsystem prepares the message for transmission through encoding and modulation, while the receiver subsystem performs demodulation, decoding, and processing to reconstruct the original message.Presentation: Finally, the processed message is presented to the recipient in a suitable format, such as audio playback, text display, or video rendering.The channel subsystem, which includes the transmission medium, can introduce various challenges like attenuation, noise, and distortion, which can degrade the quality of the transmitted signal and affect successful communication.The carrier signal typically has a higher frequency and well-defined characteristics that enable it to propagate efficiently through the transmission medium.Demodulation involves reversing the modulation process, recovering the amplitude, frequency, or phase variations imposed on the carrier signal.Amplification: In certain cases, the modulated signal may need to be amplified to ensure it has sufficient strength to travel through the transmission medium without significant loss or degradation.Factors like the distance between the transmitter and the receiver, the characteristics of the transmission medium, and external interference can cause attenuation.This can be caused by factors like multipath propagation, where the signal takes multiple paths and arrives at the receiver with different delays and phases.It can arise from various sources, such as electrical interference, atmospheric conditions, or cross-talk from neighboring channels.Filtering and Equalization: The demodulated signal may undergo additional filtering and equalization to compensate for any distortion or noise introduced during transmission.Channel Decoding: If channel encoding was applied at the transmitter, the received signal is decoded to detect and correct any errors introduced during transmission.This involves adding redundancy to the encoded message, which helps in error detection and correction at the receiver end.Redundancy added in the channel encoding stage assists in error .detection and correction algorithms.?Receiver Subsystem: ?1.?2.?3.?4.?5.?2.?3.?2.?3.?4.?5.6