a) Between multimode and single mode propagation of fiber optic cable, which propagation is better for long range communication and why? Identify the type of wireless communication for the following examples: I. Radio II. Paging System III. Wireless LAN IV. Cellular Phone V. Satellite Networks VI. Remote control [4]

b) In a military base camp, signals are coming from multiple different sources. Suppose, you want to set up a small LAN in this area with high signal interference. What kind of media would you use and why? [2]

c) What is the basic difference between the wiring pattern of Straight-Through cable and Cross-Over cable? In the figure below, state the types of cables required for each of the connections.