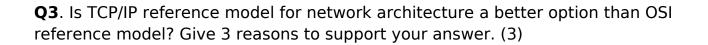
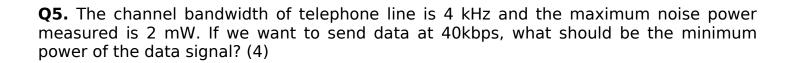
| Name:                                | Roll No  |   |                    |
|--------------------------------------|--|---|--------------------|
| Section:                             | -  |   |                    |
| Computer Networks Time allowed: 75 m |  | Total marks: 25   |                    |
|                                      | the space provided for t<br>ists of 6 questions on 3 | he answers.<br>pages (You can use back  | side of page 3 for |
| need another checking                | g mechanism at the tr                                | ransmission channels, who<br>ransport layer? Now supp<br>yer still needed? Give two | oose transmission  |
|                                      |  |   |                    |
|                                      |  |   |                    |
|                                      |  |   |                    |
|                                      |  |   |                    |
|                                      |  |   |                    |
|                                      |  | tion are the two transmis<br>letworks and wide area no                              |                    |
|                                      |  |   |                    |



**Q4.** OSI and TCP/IP reference models supports both connection-oriented and connectionless communications at network and transport layers. Please state which types of communication are supported in which of the mentioned layers of OSI and TCP/IP reference models. Give one advantage for the OSI and one advantage of TCP/IP way of supporting the connection oriented and connection less communications. (6)



**Q6.** Propagation time measures the time required for a bit to travel from the sender to the receiver whereas the transmission time measure the time required for a message to be transmitted from the sender (time required to put the complete message on the link). Find the propagation time and the transmission time for a 5 MByte message (an image) if the bandwidth of the network is 1 Mbps? Assume that the distance between the sender and the receiver is 12,000 km and that the signal travel with speed of light equal to  $2.4 \times 10^8 \text{m/s}$ . (2+2)