

PG CBCS
M.Sc. Semester-I Examination, 2021
COMPUTER SCIENCE
PAPER: COS 103

(DATA COMMUNICATION AND COMPUTER NETWORK)

Full Marks: 40

Time: 2 Hours

Answer any FOUR questions from the following:

4X10=40

1. What is Data communication? What are the components of Data Communication?
Describe about the different types of data flow communication. 2+3+5
2. What is Network? What are the features of Network Topology? Describe about the
different types of Network Topologies 2+2+6
3. What is Noisy and Noiseless channels? State the comparison between LAN, MAN,
WAN. What is Transmission impairments of Signal? 3+5+2
4. State the difference between OSI model and TCP/IP model. What is Analog to digital
Encoding and Decoding? State different types of line coding scheme. 5+2+3
5. What is Multiplexing? Describe about different types of Multiplexing. Why we need to
sampling a signal? State about the Sampling Theorem. 2+4+2+2
6. State the Error detection technique of Datalink layer. State the difference between
CSMA/CA and CSMA/CD. Describe about the working principal of Datalink layer.
3+5+2
7. Short Notes: (Must attend (i) and any 2 from rest of the question): 4+3+3
 - i) Go-Back- N ARQ
 - ii) HDLC
 - iii) SNMP
 - iv) IPv6
 - v) DNS
8. What is IP address? Define the classification of IP address with proper example. State
the difference between Adaptive and Non-Adaptive Routing. 2+4+4
9. State the difference between TCP and UDP Connection protocol. Define the Services
provided by the Transport layer. What is Pure and slotted ALOHA? 5+2+3
10. Why the concept of Piggybacking is used? Explain the working mechanism of Stop &
Wait ARQ. Explain about the various types of Channelization technique. 2+4+4