

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI

CLASS: MCA
BRANCH: MCA

SEMESTER: II
SESSION: SP/2022

SUBJECT: CA413 DATA COMMUNICATION AND COMPUTER NETWORK

TIME: 2 HOURS

FULL MARKS: 50

INSTRUCTIONS :

1. The question paper contains 5 questions each of 10 marks and the Candidates attempt all the questions.
 2. The missing data, if any, may be assumed suitably.
 3. Before attempting the question paper, be sure that you have got the correct question paper.
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- Q1. (a) How does data transfer take place using the OSI reference model? Explain with a suitable diagram. [5]
(b) Perform the comparison between OSI and TCP/IP models. [5]
- Q2. (a) Perform the comparison of different types of wired media. [5]
(b) The bandwidth of a channel is 2 MHz and its signal to noise ratio is 63. Calculate the appropriate bit rate and signal level. [5]
- Q3. (a) Explain the function of scrambling in the context of digital-to-digital encoding techniques using a suitable example. [5]
(b) What would be the transmitted frame and CRC, if the frame is 110101011 and the generator is $x^4 + x + 1$. [5]
- Q4. (a) Discuss the Go-Back N ARQ mechanism using a suitable example when the data frame is damaged, when a frame is lost, and when an acknowledgment is lost. [5]
(b) Perform the comparison between circuit switching, datagram switching, and virtual circuit switching. [5]
- Q5. (a) Write the different types of services defined by the ATM and their applications. [5]
(b) Explain the ATM cell format with its different fields. [5]

---27/04/2022-----