

2023-24

NATIONAL INSTITUTE OF TECHNOLOGY, JAMSHEDPUR
DEPARTMENT OF COMPUTER SC. AND ENGINEERING

MID TERM EXAMINATION

Subject Code : CA33109

Subject Name: Computer Communications and Network

Time: 2 Hours

Subject Teacher: Tanu Priya

Course Name: MCA (3rd sem)

Full Marks: 30

Answer all questions.

Q1. Answer the short question:- $2 \times 5 = 10$

- (i) Write the difference between serial transmission and parallel transmission.
- (ii) Write about the protocols present in the transport layer.
- (iii) What are networking devices ? write some networking devices .
- (iv) What are the main components of data communication? Explain with a diagram.
- (v) What is multiplexing? What is the need of multiplexing.

Q2. (a) Explain the OSI Model with a neat diagram and explain the function of each layer.

(b) Write the difference between circuit switching and packet switching. $5 \times 2 = 10$

Q3. (a) Explain the following. $2 \times 5 = 10$

- (i) What is topology? Explain different types of topologies with their uses.
 - (ii) Write the difference between FDM and TDM.
- (b) Write a comparative study between simplex, half duplex and full duplex transmission mode.

2024-25



राष्ट्रीय प्रौद्योगिकी संस्थान जमशेदपुर
NATIONAL INSTITUTE OF TECHNOLOGY JAMSHEDPUR
(An Institution of National Importance under MoE, Government of India)

Department of Computer Science and Engineering

Semester: Autumn Semester

Examination: Mid Semester

Course Title: Computer Communication and Network

Course Code: CS3302

Full Marks: 30

Duration: 2 Hrs.

Semester: MCA 3st Semester

(Answer All Questions)

Answer all the questions

(6x5)

1. What are the main pillars of communication? Explain it with a proper diagram.
2. Explain the concept of packet switching. What is the need of communication ?
3. Explain the OSI model with a proper diagram.
4. Compare between different modes of transmission. write the difference between OSI and TCP/IP model.
5. Explain what are the protocols present in the transport layer of OSI model.
6. What are the protocols present in data link layer and transport layer.

2024-25 2024-25

NIT JAMSHEDPUR

Computer Science and Engineering Department

END TERM EXAMINATION

Subject Code: CS3302

Subject Name: Computer Communication and network

Time: 3 Hours

Subject Teacher: Miss Tanu Priya

Course Name: MCA (3rd SEM)

Full Marks: 50

Answer all the questions.

Each question carries 5 marks (5x10=50)

Q1.

- (a) What is multiplexing? What are the types of multiplexing and explain them?
- (b) What is the difference between analog and digital communication? List the advantages of digital communication over analog communication.

Q2.

- (a) What is the difference between Bluetooth and Wifi? Explain the term switching and define its types and use of it.
- (b) What do you understand by the term CRC and also write about its use in network? Explain the process of GO-N-BACK method.

Q3.

- (a) What is broadcast domain and collision domain? Explain the mechanism of store and forward method.
- (b) Explain the process which are related to data link layer. Write the difference between IPv4 and IPv6.

Q4.

- (a) Write the difference between pure Aloha and Slotted Aloha. What is persistent in CSMA and explain the types of persistent?
- (b) What are the types of IP address and also explain the use of each class?

Q5.

(a) An 8-bit byte with binary value 10101111 is to be encode using an even-parity hamming code. What is the binary value after encoding?

(b) You have the following network id: 131.112.0.0. you need at most 500 hosts per sub-network. How many sub-networks can you create? What subnet mask will you use? What is subnetting ?

All the best