VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY (VSSUT), ODISHA
Even Mid Semester Examination for Academic Session 2024-25

COURSE NAME: **B.Tech**   SEMESTER: **4th**

BRANCH NAME: **CSE/IT**
SUBJECT NAME: **Computer Network (CN)**

FULL MARKS: **30**   TIME: **90 Minutes**

Answer **All** Questions.
The figures in the right-hand margin indicate Marks. *Symbols carry usual meaning.*

Q1.   Answer all Questions.   **[2 × 3]**

a) Differentiate between port address, logical address and physical address.   - CO1
b) List various transmission impairment in the computer network.   - CO2
c) If the bandwidth of a channel is 8 Kbps how long does it take to send a frame of   - CO3
   200000 bits out of this device?

Q2.
                                                                        [8]
A) What is OSI model? Explain OSI model functionality with suitable diagram showing   - CO1
   the data transfer from sender to receiver?

                              OR
B) What is network topology? Explain various types of network topology with suitable   - CO1
   diagram and include its advantages and disadvantages?

Q3.
                                                                        [4+4]
A) What is transmission media? Describe various categories of transmission media.   - CO2
B) Differentiate between packet switching and circuit switching.

                              OR
C) Discuss different network devices used in computer network.   - CO2

D) What is switching? Explain virtual circuit switching and its setup phases with suitable
   figure?

Q4.
                                                                        [4+4]
A) What is error detection? What are various methods for error detection?   - CO3

B) Received Hamming code word is 11110110101. Even parity was used. Locate and
   correct the bit in error?

                              OR
C) A sender needs to send four data items 0x3456, 0xABCC, 0x02BC and 0xEEEE. Find   - CO3
   the checksum at the receiver site if there is no error.

D) Suppose we want to transmit the message 1011001001001011 and protect it from
   errors using the CRC8 polynomial $x5 + x3 + x + 1$. Use polynomial long division to
   determine the message that should be transmitted.