

**TDC Odd Semester Exam., 2020  
held in July, 2021**

**COMPUTER SCIENCE**

( Pass )

( 5th Semester )

Course No. : BCSP-501

( **Computer Network and Data Communication** )

Full Marks : 35

Pass Marks : 12

Time : 2 hours

*The figures in the margin indicate full marks  
for the questions*

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. (a) Explain OSI model. 4  
(b) What is carrier signal? How is multiplexing done before signal transmission? 3

2. (a) Differentiate between half-duplex and full-duplex modes of transmission. 3  
(b) Compare star topology and ring topology. 4

UNIT—II

3. (a) Write a short note on stop-and-wait ARQ protocol. 4  
(b) Explain high-level data link control (HDLC) protocol. 3
4. (a) Find out the Hamming code of 11110000. 5  
(b) Draw the structure of a LAN. 2

UNIT—III

5. (a) What is IP address? What is the size of IPv4 address? Find the class of the address 194.23.120.8. 3  
(b) Describe briefly about gateway and switch. 4
6. Write short notes on the following : 7  
(a) Netid and Hostid  
(b) Address space  
(c) Multicast and unicast

( 3 )

UNIT—IV

7. (a) Compare between TCP and UDP. 5  
(b) What is noise? What is the unit of noise? 2
8. (a) Explain UDP. 3  
(b) Differentiate between open-loop congestion control and closed-loop congestion control. 4

UNIT—V

9. Write short notes on any *two* of the following :  $3\frac{1}{2} \times 2 = 7$   
(a) HTTP  
(b) Electronic mail  
(c) SMTP
10. What is firewall? How does it help when we are online? 7

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