2022
B.A./B.Sc.
Third Semester
CORE – 7
COMPUTER SCIENCE
Course Code: CSC 3.31
(Computer Networks)

Total Mark: 70　　　　　　　　　　　　*Pass Mark: 28*
Time: 3 hours

Answer <u>five</u> questions, taking <u>one</u> from each unit.

UNIT–I

1. (a) What is a computer network? What are the benefits of using a
    computer network?　　　　　　　　　　　　　1+4=5
   (b) Explain the different types of network topologies.　　　9

2. (a) Explain the common types of networks based on geographical area
    covered.　　　　　　　　　　　　　　　　5
   (b) With the help of a diagram, explain the functionalities of each layer of
    the OSI reference model.　　　　　　　　　　9

UNIT–II

3. (a) What is data communication? What are the components of data
    communication?　　　　　　　　　　　　　1+4=5
   (b) What are analog and digital signals?　　　　　　4
   (c) List the major differences between TDM and FDM.　　5

4. (a) What is transmission media? Explain the three major types of guided
    media.　　　　　　　　　　　　　　　　1+6=7
   (b) Write a note on packet switching technique.　　　　7

UNIT–III

5. (a) What is DSL? What are its features? How does it compare with
    dial-up modems?　　　　　　　　　　　　1+2+3=6

(b) Explain the ethernet network with an illustration. What are the advantages and disadvantages of ethernet? 4+4=8

6. (a) What is CSMA/CD? Explain with a flowchart the CSMA/CD algorithm. 1+6=7

(b) Explain IP addressing? Compare between IPv4 and IPv6. 3+4=7

UNIT–IV

7. (a) List and explain the responsibilities of the transport layer. 8

(b) Briefly explain TCP and UDP. 4

(c) What is meant by error and flow control? 2

8. (a) Explain with diagrams the three-way handshake connection establishment and closing connection processes. 10

(b) Write a note on DNS. 4

UNIT–V

9. (a) What is WWW? With the help of a diagram, explain the system architecture of WWW. 2+7=9

(b) What is HTTP? Explain the basic features that make HTTP a simple but powerful protocol. 2+3=5

10. (a) Write a short note on URL. 2

(b) What is electronic mail? What are the services provided by it? Explain the various components of an electronic mail system. 1+3+8=12

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