



## Model Questions

PRS/KS/24/2638

**Faculty of Science & Technology**  
**Fourth Semester B.Tech. (Information Technology) (C.B.C.S.) Examination**  
**INTRODUCTION TO COMPUTER NETWORKS**

Time : Three Hours]

[Maximum Marks : 70

**INSTRUCTIONS TO CANDIDATES**

- (1) All questions carry marks as indicated.
  - (2) Solve Question No. **1 OR** Question No. **2**.
  - (3) Solve Question No. **3 OR** Question No. **4**.
  - (4) Solve Question No. **5 OR** Question No. **6**.
  - (5) Solve Question No. **7 OR** Question No. **8**.
  - (6) Solve Question No. **9 OR** Question No. **10**.
1. (a) Define Computer Network and explain components of Computer Network. 7  
 (b) Define the terms : 7  
 (a) Cryptography  
 (b) Ciphertext  
 (c) Plain text  
 (d) Encryption
- OR**
2. (a) Explain the following terms :  
 (a) Star Topology  
 (b) Tree Topology  
 (c) Mesh topology  
 (d) Hybrid Topology 7  
 (b) What is user Authentication ? What are the types of user Authentication ? 7
  3. (a) Draw and Explain OSI Reference Model. 7  
 (b) Explain Computer Network Architecture and their model. 7
- OR**
4. (a) Explain TCP/IP Model. 7  
 (b) Explain Design issues for Layer. 7
  5. (a) Differentiate between Datagram and virtual circuit approach. 7  
 (b) Explain Digital-to Analog Conversion. 7
- OR**
6. (a) What is classful and classless addressing ? 7  
 (b) Explain Distance vector routing algorithm . 7
  7. (a) What are the types of flow control ? Explain Sliding Window Protocol. 7  
 (b) Explain in detail Cyclic Redundancy Check in Error Control with Example Data unit 1011000 is divided by 1011. 7

**OR**

## Model Questions

8. (a) Explain the following terms : 8
- (1) ALOHA
  - (2) Slotted ALOHA
  - (3) CSMA/CD
  - (4) CSMA/CA
- (b) Explain High Level Data Link Level (HDLC) Control Protocol. 6
9. (a) Differentiate between FTP and TFTP. 7
- (b) What is DNS ? Explain it with example. 7
- OR**
10. (a) Differentiate between Application Layer Protocol ARP and RARP. 7
- (b) What is the function of Simple Mail Transfer Protocol ? 7

## Model Questions

### B.Tech. (Information Technology) Fourth Semester (C.B.C.S.) Introduction to Computer Network

P. Pages : 2  
Time : Three Hours



PSM/KW/23/2638  
Max. Marks : 70

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What do you mean by network? Discuss the different components of a computer network. 5
  - b) Elaborate the following types of networks: 9
    - i) Local Area Network (LAN).
    - ii) Metropolitan Area Network (MAN).
    - iii) Wide Area Network (WAN).

OR

2. a) What is meant by topology? Discuss the different types of topologies with explanation, diagram and their advantages and disadvantages. 8
  - b) Brief the following **any two**. 6
    - i) Cryptography.
    - ii) Any one security protocol used in internet.
    - iii) Firewalls.
3. a) Elaborate the Network software along with its significance. 5
  - b) What are the design issues for the layers? Discuss any one. 5
  - c) List the demerits of layered architecture. 4

OR

4. a) State the difference between OSI reference model and TCP/IP reference model. Draw and discuss the OSI reference model. 10
  - b) What do you mean by service primitives? 4
5. a) What are the functions of physical layer? Also, discuss the design issues of physical layer. 7

PSM/KW/23/2638

1

P.T.O

## Model Questions

- b) Elaborate the following: 7
- Circuit switching network.
  - Virtual circuit Network.

OR

6. a) Discuss the wired and wireless transmission media with neat diagram and examples. 8
- b) What do you mean by Analog to digital and Digital to Analog conversion? 6
7. a) Discuss the function of datalink and Network layer. 7
- b) Brief the following: 7
- Stop and wait protocol.
  - Go back-N protocol.

OR

8. a) Discuss the steps used by the following algorithms: 8
- Distance Vector Routing algorithm.
  - Link State Routing algorithm.
- b) Explain the class full addressing in IPv4 version. 6
9. a) List the functions performed by the transport layer of OSI reference model. 5
- b) What are functions performed by the Application layer? 4
- c) Discuss the Quality of Service parameters. 5

OR

10. a) Elaborate the use of following protocols: 8
- SMTP
  - SNMP
  - FTP
  - HTTP
- b) State any one difference between IPv4 and IPv6. Discuss the IPv6. 6

\*\*\*\*\*



## Model Questions

B.Tech. Fourth Semester (Information Technology) (C.B.C.S.)

### Introduction to Computer Network

P. Pages : 2

Time : Three Hours



\* 1 0 8 5 \*

MSP/KS/23/2598

Max. Marks : 70

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Assume suitable data whenever necessary.
  8. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Define Computer Network and Explain component of Computer Network. 7  
b) Define term- 7  
a) Cryptography b) Ciphertext  
c) Plain text d) Encryption
- OR**
2. a) Explain the following term- 7  
a) Star Topology b) Tree Topology  
c) Mesh topology d) Hybrid Topology  
b) What is user Authentication? What is the types of User Authentication 7
  3. a) Draw and Explain OSI Reference Model 7  
b) Explain Computer Network Architecture and their model. 7
- OR**
4. a) Explain TCP/IP Model. 7  
b) Explain Design issues for Layer. 7
  5. a) Differentiate between Datagram and virtual circuit approach. 7  
b) Explain Digital-to-Analog Conversion. 7

**OR**

## Model Questions

6.
  - a) What is classful and classless addressing. 7
  - b) Explain Distance vector routing algorithm. 7
7.
  - a) What are the types of flow control? Explain Sliding Window Protocol. 7
  - b) Explain in detail Cyclic Redundancy check in Error control with Example Data unit 1011000 is divided by 1011. 7

**OR**

8.
  - a) Explain the following term- 8
    - i) ALOHA ii) Slotted ALOHA
    - iii) CSMA/CD iv) CSMA/CA
  - b) Explain High Level Data Link Level (HDLC) control protocol. 6
9.
  - a) Differentiate between FTP and TFTP 7
  - b) What is DNS. Explain it with example. 7

**OR**

10.
  - a) Differentiate between Application Layer Protocol ARP and RARP 7
  - b) What is the function of Simple Mail Transfer Protocol. 7

\*\*\*\*\*



## Model Questions

B.Tech. (Information Technology) Fourth Semester (C.B.C.S.) Winter 2022

### Introduction to Computer Network

P. Pages : 2

Time : Three Hours



SPM/KW/22/2598

Max. Marks : 70

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Due credit will be given to neatness and adequate dimensions.
  8. Assume suitable data whenever necessary.
  9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) List & Elaborate the components of computer Network. 7
- b) What is network topology? Explain the different network topologies with diagram. 7

OR

2. a) What are different types of network? Explain. 6
- b) Write short note on **any four**. 8
  - a) HUB
  - b) Switch
  - c) Router
  - d) Firewalls
  - e) Cryptography
  - h) Security protocols.
3. Enumerate the functions of seven layers of ISO-OSI reference model with the help of diagram. 14

OR

4. a) Compare ISO-OSI model with TCP/IP. 5
- b) Lists merits & Demerits of Layered Architecture. 5
- c) List design issues of Layered Architecture. 4
5. a) Explain the structure of Twisted Pair cable. Why there need of Twisting the cable? 5
- b) Compare datagram Network with virtual circuit. 5
- c) List the Design issues of physical Layer. 4

OR

SPM/KW/22/2598

1

P.T.O

## Model Questions

6. a) Draw the graph of the NRZ-L scheme using each of the following data streams, assuming that the last signal level has been positive. From the graphs guess the bandwidth for this scheme using the average number of changes in the signal level. 6
- a) 00000000                      b) 11111111  
c) 01010101                      d) 00110011

- b) List three techniques of digital to digital conversion. 6

- c) Define DC component & its effects on digital transmission. 2

7. a) Following table gives the 7 bit data code that is transmitted & received. Using Hamming code find the location of 1 bit error in the received code. 7

Transmitted	Received
1011001	1010001
0110001	1110001

- b) What is CSMA protocol? Explain its features. Also explain 1-persistence and Non persistence protocol. 7

OR

8. a) Discuss the polynomial method of error handling, CRC for the data given below 6
- $P(x) = x^7 + x^6 + x^5 + x^4 + x^3 + x^0$   
 $G(x) = x^5 + x^4 + x^2 + x^1 + x^0$

- b) Classify following IP address 5
- i) 200.2.2.3                      ii) 0.0.0.0  
iii) 191.0.1.7                      iv) 223.0.0.0  
v) 170.40.11.0/24

- c) Explain the concept of flow control. 3

9. a) List all Quality of Services (QoS) parameters used in transport Layer. 4

- b) Compare flow control with buffering. 5

- c) Explain various services primitives present on the transport layer. 5

OR

10. a) Compare FTP with TFTP. 4

- b) Explain about DNS in the internet. 5

- c) Write short note on **any two**. 5
- i) ARP                      ii) ICMP                      iii) SMTP                      iv) HTTP

\*\*\*\*\*