

SUBJECT : PAPER-503 : NETWORK TECHNOLOGIES

THIRD YEAR B.C.A. (SEM. V) EXAMINATION

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Third Year B.C.A. (Sem. V)(CBCS) Examination

March / April – 2014

Network Technologies: Paper-503

[Time: 3 Hours]

[Total Marks: 70]

Instructions

(1)

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Name of the Subject :

Network Technologies: Paper-503

Subject Code No:

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Student's Signature

(2) Give appropriate example, when require.

(3) Do not change options.

Q.1 Answer the following in brief:

10

1. Explain Nyquist bit rate.
2. What is the function of SMTP and HTTP?
3. Differentiate between baseband and broadband transmission.
4. Explain NTFS feature of Windows NT operating system.
5. Define Network Protocols.

Q.2 Answer the following: (Any Four)

20

1. Discuss bus topologies in details.
2. Explain digital certificates in details.
3. Discuss LAN and WAN.

4. Explain User datagram with its applications.
5. Write a note on fiber optic cable with its advantages and disadvantages.

Q.3 Answer the following: (Any Three) 24

1. Write a note on Satellite communication.
2. Write a note on different server types.
3. Explain Firewall.
4. Write a note on TCP with its header.

Q.4 Answer the following: 16

1. Explain the responsibility of three upper layers of OSI model. 6
2. Explain common features of different network operating system. 8

OR

2. Write a note on wireless networks. 8
3. Differentiate between IP address and MAC address. 2

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(2) Give appropriate example, when require.

(3) Do not change options.

Q.1 Answer the following in brief:

10

1. Define analog and digital signals.
2. What is on-line storage, offline storage and near-line storage?
3. What are advantage and disadvantage of Bus topology?
4. Define the term: baud and bandwidth.
5. Briefly explain dedicated servers.

Q.2 Answer the following: (Any Four)

20

1. Define the terms Cryptography. Write a note on Asymmetric Cryptography.
2. Write a note on twisted pair cable.
3. Write a note on UDP.

4. Explain the responsibilities of application and presentation layers of OSI model.
5. Explain print server and message server.

Q.3 Answer the following: (Any Three) 24

1. Explain peer Network. Discuss advantages and disadvantages of it.
2. Discuss need, uses and advantages of network.
3. Write a note on Firewall.
4. Explain common features of different network operating system.

Q.4 Answer the following: 16

1. Explain satellite communication. 8
2. Explain wireless ad-hoc network and wireless Sensor Network. 8

OR

2. What is segment? Explain each fields of TCP segment. 8

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(2) Give appropriate example, when require.

(3) Do not change options.

Q.1 Answer the following in brief: (Any Five)

10

1. Define dedicated Servers.
2. Why do we require a twist in a twisted pair cable?
3. What do you mean by encryption and decryption?
4. Explain BitRate.
5. Differentiate between star & ring topology.
6. Explain Baud rate, Bandwidth.

Q.2 Answer the following: (Any Four)

20

1. Write a note on Client Server Networks & Hybrid networks.
2. Explain Star and Ring Topology in details.

3. Explain Satellite Communication.
4. Explain optical Fibre in brief.
5. Explain the features of different Client Operating System.

Q.3 Answer the following: (Any Three)

24

1. Explain Transmission Media. Explain in details Guided Media with its applications, advantages and disadvantages.
2. Explain Cryptography. Explain Private Key cryptography in detail with an example.
3. Write a note on IP address and IP subnet.
4. Explain Internet Transport Protocols in details. Explain TCP with its features and services.

Q.4 Write a note on any following: (Any Two)

16

1. OSI Reference Model
2. Firewall
3. TCP & UDP

Third Year B.C.A. (Sem. V)(CBCS) Examination

March / April – 2017

Network Technologies: Paper-503(New Course)

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 (A). Answer the following in brief: (Any Five)

10

- (1) What is Cipertext?
- (2) Explain the concept of Peer to Peer Architecture.
- (3) Explain the term: Frequency and Nyquist Ratio
- (4) Explain Guided Communication Media. List any three examples.
- (5) Explain Token Passing Mechanism in Ring Topology.
- (6) Write the differences between Repeater and Hub.

(B). Explain in detail how the information flows from one host to another in OSI based system.

6

Q.2 Answer the following: (Any Three) 15

- (1) How Switches differ from Hub?
- (2) Explain Application Layer and Presentation Layer components and functions.
- (3) Mention the advantages and disadvantages of Fiber Optics.
- (4) What is header? Explain each field of TCP header.

Q.3 Answer the following: (Any Three) 24

- (1) What is an IP address? Explain different classes of IP address. Also explain the default mask for each category of IP classes.
- (2) What is Network Hub? Write its applications. Explain the different types of Hub used for network with diagram.
- (3) Explain the Bus type topology and Ring type topology networks. Compare Their performances.
- (4) What is Firewall? What are the functions of Firewall? Explain the types of firewall details.

Q.4 Write a note on any following: (Any Three) 15

- (1) TCP/IP model
- (2) Public Key Infrastructure
- (3) Bridges
- (4) Wireless Network

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March / April – 2018

Network Technologies: Paper-503(New Course)

[Time: 3 Hours]

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- (2) Write to the point.
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Q.1 Answer the following in brief:

10

- (1) Explain the use of Private Key.
- (2) Differentiate between Active Hub and Passive Hub.
- (3) Differentiate between star topology and bus topology.
- (4) Give uses of Hub and Gateway.
- (5) What do you mean by broadcast and multicast?

Q.2 Answer the following: (Any Four)

20

- (1) Explain unguided media. (Radio waves and Microwaves).
- (2) Explain switch, also compare it with repeater.

- (3) What is Header? Explain each fields of UDP Header.
- (4) Explain Peer to Peer networks. Explain the advantages and disadvantages of it.
- (5) Explain tree(star-bus) topology in details. Also give advantages and disadvantages.

Q.3 Answer the following: (Any Three)

24

- (1) Explain Data Link Layer with its functions, protocols and network devices of OSI model.
- (2) Explain Wired Transmission Media. Explain Twisted Pair Cable with its diagram, functions, applications, advantages and disadvantages.
- (3) Explain Wired Media. Explain Optical Fiber Cable with its diagram, functions, applications, advantages and disadvantages.
- (4) Explain Network Layer with its functions, protocols and network devices of OSI model.

Q.4 Write a note on any following: (Any Two)

16

- (1) Explain in details client server networks and hybrid networks.
- (2) Explain Firewall, with its applications, type, working, advantages and disadvantages.
- (3) Explain in details: Digital Certificate.

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(Old or New to be mentioned where necessary)

[Time: 3 Hours]

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 Answer the following in brief: (Any Five)

10

1. Define Nyquist bit rate.
2. Write about the concept of client and server.
3. Define the term Cryptography.
4. What are the difference between Hub and Switch?
5. Define broadcast and multicast.
6. What is Flow control?

Q.2 Answer the following: (Any Three) 21

1. Explain network and transport layers of OSI model.
2. Explain File servers.
3. Write a note on fibre optic cable with its advantages and disadvantages.
4. What is Digital signature? Write in details about its usage.

Q.3 Answer the following: (Any Three) 21

1. Write a note on digital certificate.
2. Write in detail about Peer based network, Client server networks, with its advantages and disadvantages.
3. What is firewall? What are the functions of firewall? Explain the types of firewall.
4. Explain in detail: Repeater, Hub.

Q.4 Write a note on any following: (Any Three) 18

1. Ring topology
2. Bridges
3. IP Subnetting
4. Public Key Infrastructure

Third Year B.C.A. (Sem. V) Examination

November / December – 2014

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(2) Give appropriate example, when require.

(3) Do not change options.

Q.1 Answer the following in brief:

10

1. Explain Block Ciphers.
2. Explain the significance of hardware-software protocol.
3. Differentiate between guided media and unguided media.
4. Why is there a twist in twisted pair cable? Justify.
5. Briefly explain client operating system.

Q.2 Answer the following: (Any Four)

20

1. Write a note on co-axial cable.
2. Write a short note on ring topology.
3. Explain IP address and IP subnet.

4. Explain PKI.
5. Define protocol? Explain different types of network protocols.

Q.3 Answer the following: (Any Three) 24

1. Explain wireless transmission media.
2. What is network operating system? Compare features of any two network operating system.
3. Discuss peer networks with their advantages and disadvantages.
4. Explain star and ring topology with their advantages and disadvantages.

Q.4 Answer the following: 16

1. Explain network & transport layer of OSI model. 8
2. Write a note on TCP operation. 8

OR

2. Discuss hardware and software resource sharing. 8

Third Year B.C.A. (Sem. V)(CBCS) Examination

October / November – 2015

Network Technologies: Paper-503

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 Answer the following in brief: (Any Five)

10

1. Define Bandwidth, Transmission rate.
2. List the protocols used in network and transport layer.
3. Explain NTFS feature of Windows NT operating system.
4. Define block cipher.
5. Give advantages and disadvantages of mesh topology.
6. Define network protocol.

Q.2 Answer the following: (Any Four)

20

1. Explain bus type topology and ring type topology networks. Compare their performance.
2. Explain Fibre Optics cable in details.
3. Compare the feature of Client Operating System and Server Operating System.
4. Explain the importance of Digital Certificates and Digital Signatures.
5. Write a note on UDP.

Q.3 Answer the following: (Any Three)

24

1. Explain the function, protocols and network components of each layer of OSI reference model.
2. Write a note on co-axial cable.
3. Explain Cryptography. Explain Public Key cryptography in detail with an example.
4. Write a note on Satellite Communication.

Q.4 Write a note on any following: (Any Two)

16

1. Write a note on Unguided Transmission media used in computer networks.
2. Write a note on Client Server Model and Peer-to-Peer Model.
3. Firewall.

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Network Technologies: Paper-503

(New Course)

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the questions.

Q.1 (A) Answer in brief: (Any Five)

10

1. What is Network Topology? Give the list of Network Topology.
2. One of the advantages of Computer Network is high reliability. Explain it.
3. How Switch differs from Hub?
4. What is the relation between Data rate and Bandwidth?
5. Twisted pair cables are twisted in a helical form, what purpose it serves. Explain with the aid of diagram.
6. What is the purpose of Public and Private Key?

- (B) Compare Twisted Pair, Coaxial Cable and Fiber Optic Cable based on the following factors: 6
1. Cost
 2. Installation
 3. Bandwidth Capacity
 4. Attenuation.
- Q.2 Answer the following: (Any Three) 15**
1. What is Peer to Peer Network? Explain and draw the diagram.
 2. Explain the method of communication using Satellites.
 3. What are the features of Network Software?
 4. Describe UDP and TCP.
- Q.3 Answer the following: (Any Three) 24**
1. What is Firewall? What are the functions of Firewall? Explain Packet Filter and Proxy Firewall in detail.
 2. Explain Star and Bus topology with its features and compare their advantages and disadvantages.
 3. Explain the following layers of OSI model in details: Physical and Data Link Layer.
 4. Differentiate between IP address and MAC address. Also explain IP configuration.
- Q.4 Write a note on any following: (Any Three) 15**
1. Types of Networks(client-server, hybrid networks)
 2. Fiber Optic Communication
 3. Server Operating System
 4. Public Key Infrastructure

Third Year B.C.A. (Sem. V)(CBCS) Examination

November / December – 2016

Network Technologies: Paper-503

(Old Course)

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 (A) Answer in brief (Any Five):

10

- (1) What is Cipertext?
- (2) Explain the concept of Peer to Peer Architecture.
- (3) Explain the terms: Frequency and Nyquist Ratio.
- (4) Explain Guided Communication Media. List any three examples.
- (5) Explain Token Passing Mechanism in Ring Topology.
- (6) Write the differences between Repeater and Hub.

(B) What is server? What are the different types of servers? Write in detail about any types of servers.

6

Q.2 Answer the following: (Any Three)

15

- (1) Explain Application Layer components and functions.
- (2) What is Client Server Network? Explain and draw the diagram.
- (3) What is Topology? Explain various network topologies stating their merits and demerits.
- (4) Explain the different types of cables used for computer network in details with examples.

Q.3 Answer the following: (Any Three)

24

- (1) Compare the features of different Network Operating System.
- (2) What is Firewall? How it works? What are the different types of Firewall?
- (3) Compare Microwave, Satellite and Infrared Transmission system, based on following factors:
 - a) Installation
 - b) Bandwidth Capacity
 - c) Attenuation
- (4) What is Network Hub? Write its application. Explain the different types of Hubs used for network with diagram.

Q.4 Write a note on any following: (Any Three)

15

- (1) User Datagram Protocol(UDP)
- (2) Gateway
- (3) Digital Signature
- (4) Network Protocols

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Third Year B.C.A. (Sem. V) Examination

October / November – 2017

Network Technologies: Paper-503

(New Course)

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 Answer the following in brief:

10

- (1) Explain broadcast network with examples.
- (2) Define Transmission Media with the help of classification diagram.
- (3) Explain subnet mask.
- (4) Give uses of Hub and Gateway.
- (5) What do you mean by broadcast and multicast?

Q.2 Answer the following: (Any Four)

20

- (1) Explain Symmetric Key Cryptography in detail.
- (2) Differentiate between Router and Bridge.
- (3) What is Header? Explain each fields of UDP header.
- (4) Explain Peer to Peer Network. Explain the advantages and disadvantages of it.
- (5) Explain tree(star-bus) topology in details. Also give advantages and disadvantages.

Q.3 Answer the following: (Any Three)

24

- (1) Explain Physical Layer with its functions, protocols and network devices of OSI model.
- (2) Explain Wired Media. Explain Coaxial Cable with its diagram, functions, applications, advantages and disadvantages.
- (3) Explain Wired Media. Explain Optical Fibre Cable with its diagram, functions, applications, advantages and disadvantages.
- (4) Explain Network Layer with its functions, protocols and network devices of OSI model.

Q.4 Write a note on any following: (Any Two)

16

- (1) Unguided Media
- (2) TCP/IP Model. Also compare it with OSI model.
- (3) Explain in detail: Digital Certificate

Third Year B.C.A. (Sem. V)(CBCS) Examination

November / December– 2018

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- (2) Write to the point.
- (3) Provide example and diagrams wherever appropriate/ necessary.
- (4) Figures to the right indicate full marks of the question.

Q.1 Answer the following in brief: (Any Five)

10

- (1) Define Analog signal.
- (2) Why do we require a twist in a twisted pair cable?
- (3) Which class of IP address is used for multicast communication?
- (4) Explain the significance of hardware-software protocols.
- (5) Why do we require network security?
- (6) What is the use of Application layer in OSI Model?

Q.2 Answer the following: (Any Three) 21

- (1) Explain MAC address. Give difference between MAC address and IP address.
- (2) Write in brief about Guided Transmission Media.
- (3) Explain Bus and Star topologies with its advantages and disadvantages.
- (4) Write in detail about Public Key Infrastructure.

Q.3 Answer the following: (Any Three) 21

- (1) Explain TCP/IP model.
- (2) Explain: Repeater, Hub
- (3) Explain Unguided Transmission Media.
- (4) Write a note on use, need and advantages of network.

Q.4 Write a note on any following: (Any Three) 18

- (1) Firewall
- (2) Message server
- (3) Router & Bridge
- (4) TCP header