**TYBSC Computer Science**

**Computer Networks II**

**Question Bank**

**Chapter 1**

**One Mark Questions**

1. What is BSS?
2. What is ESS?
3. What is the difference between BSS & ESS?
4. What is Bluetooth?
5. What is Piconet?
6. What is Scatternet?
7. What is the difference between piconet & Scatternet?
8. How many secondary can a single primary support in Bluetooth?
9. What are the types of stations defined by IEEE 802.11?

**Five Mark Questions**

1. What are the advantages of using wireless technologies over wired technologies?
2. Explain IEEE 802.11 architecture.
3. What is Bluetooth? Explain its architecture.
4. State the differences between:
	1. BSS & ESS
	2. Piconet & Scatternet
5. Compare Wireless LAN & Bluetooth.
6. Explain the IEE 802.11 station types.

**Chapter 2**

**One Mark Questions**

1. What are the functions of the network layer?
2. What are the two types of switching mechanisms used in the network layer?
3. What is the size of an IPV4 address and address space?
4. Which notations are used to express an IPV4 address?
5. Write the syntax of the dotted decimal format.
6. How many classes are IP Addresses divided into?
7. Write the default address mask for class A,B &C.
8. What does the /n Notation Stand for?
9. State the purpose of NATting?
10. State the purpose of the TTL and Total Length Fields.
11. Name the fields related to fragmentation.
12. List the options in IP datagram.
13. List the desirable characteristics of routing algorithm.
14. What are the two types of routing algorithms?
15. What is Congestion?
16. What are the two congestion control mechanisms?

**Five Mark Question**

1. Explain the design issues of the network layer.
2. Write a note on packet switching.
3. Differentiate between virtual circuit & datagram switching.
4. What are the services provided by network layer to transport layer?
5. Write a note on classful addressing.
6. Explain how class can be identified from the IP address.
7. Write a note on Subnetting.
8. Explain how subnetting & supernetting is achieved.
9. Explain the IP address structure when subnetting is used.
10. Write a note on classless addressing.
11. Write a note on network address translation.
12. Draw a structure of IPV4 datagram and explain its fields.
13. Explain how fragmentation of an IP datagram takes place.
14. Explain the desirable characteristics of routing algorithm.
15. Compare adaptive and Non-adaptive routing.
16. Explain the causes of congestion.
17. Explain the Open and closed loop congetion control mechanisms.
18. Explain the congestion prevention policies used in data link layer.
19. Explain the congestion prevention policies used in network layer.
20. Explain the congestion prevention policies used in transport layer

**Chapter 3**

**One Mark Questions**

1. What is the difference between logical and physical address?
2. What are the two ways to map logical and physical addresses?
3. What are the difference between static and static and dynamic mapping?
4. What is purpose of ARP?
5. What is purpose of RARP?
6. What is ARP cache used for?
7. What is the role of ARP Proxy?

**Five Mark Questions**

1. Explain static and dynamic mapping for mapping logical and physical addresses.
2. Write a note on ARP.
3. Explain ARP packet format.
4. Write a note on proxy ARP.
5. Explain the four cases of using ARP.
6. What are the advantages & disadvantages of proxy ARP?
7. Write a note on RARP.
8. Explain the need of RARP with an example.
9. What the advantages and disadvantages of RARP?

**Chapter 4**

**One Mark Questions**

1. What is meant by Process-to-Process Delivery?
2. What are the port number ranges?
3. Which applications use UDP?
4. What are the sections used to calculate checksum in UDP?
5. What are the applications of TCP?
6. TCP is a datagram oriented protocol. True/False.
7. What are the numbers used by TCP?
8. List the TCP flags.
9. What are the ephemeral port numbers?
10. Which are the well Known port numbers?
11. What is the maximum and minimum size of UDP datagram?
12. What is the maximum size of TCP header?

**Five Mark Question**

1. Explain the need of Transport Layer?
2. Explain the features of Transport Layer.
3. Write a note on process to process delivery.
4. Explain the concept of port numbers.
5. Write a note on client/server paradigm and the use of port numbers.
6. Differentiate between connectionless & connection Oriented service.
7. Differentiate between reliable and unreliable service.
8. Write a note on UDP.
9. Explain how checksum calculation is done in UDP.
10. Explain the UDP datagram format.
11. Explain UDP operation in brief.
12. Explain TCP services.
13. Explain the features of TCP.
14. Explain the TCP segment format.
15. Explain the role of buffers in TCP.
16. Explain the numbering system used by TCP.
17. Explain the various flags used in TCP.
18. Differentiate the TCP & UDP Protocols.

**Chapter 5**

**One Mark Questions**

1. What is DNS?
2. What is the difference between flat and hierarchical name space?
3. What is a label & Domain?
4. What is FQDN & PQDN?
5. What is a zone?
6. What is the difference between primary & Secondary Server?
7. Name the three sections of DNS tree.
8. “Catching increases the efficiency of name resolution”. True/False & Justify.
9. Determine which of the following is FQDN & which is PQDN.
	1. Edu
	2. Comp.edu.
	3. dept.college.univ.edu.
	4. dept.college
10. What are the components of an email address?
11. Why do we need POP3 And IMAP4?
12. SMTP is a push protocol.True/False.
13. List the task performed by User Agent.
14. List any four commands of SMTP.
15. What are the types of User Agent?
16. What is the purpose of FTP?
17. What are the two types of Connections and their ports used in FTP?
18. What is the purpose of Control & Data Connection?
19. What is the difference between FTP Control and Date Connection?
20. What are the file types supported by FTP?
21. What are the data structures supported by FTP?
22. What are the transmission modes supported by FTP?
23. What is anonymous FTP?
24. What is the structure of WWW?
25. What are the three components of a browser?
26. What type of documents are supported by WWW?
27. What is the advantage of using proxy server?
28. What is the structure of a request & response messages in HTTP?
29. What is the difference between persistent & non persistent connection in HTTP?
30. What are the components of a URL?

**Five Mark Questions:**

1. Explain flat & hierarchical name space with advantages & disadvantages.
2. Explain the Domain name space & its entities.
3. Explain the difference between FQDN & PQDN.
4. Write a note on DNS in the internet.
5. Explain generic, country & inverse domains.
6. Explain how name-address mapping is done in DNS.
7. Explain the different mechanisms used for name address resolution.
8. Differentiate between recursive & iterative resolutions.
9. Explain the different scenarios in the email process.
10. Explain the services provided by the user agent.
11. Explain the role of Mail Transfer Agent.
12. Write a note on POP3 & IMAP4.
13. Write a note on SMTP.
14. Explain how FTP Works.
15. Write a note on FTP Control & data Connection.
16. Explain how data transfer takes place in FTP using the data transfer connection.
17. Explain the architecture of WWW.
18. Explain the components of Browser.
19. Write a note on web documents.
20. Explain HTTP request & response messages.

**Chapter 6**

**One Mark Question**

1. List the connectivity devices according to the layers which they operate.
2. What is the role of a repeater?
3. What is the role of hub?
4. How does a hub differ from a repeater?
5. List the types of bridges?
6. What are the criteria transparent bridges must meet?
7. What is the role of a bridge?
8. What is the function of a router?
9. What are the topologies used in backbone networks?
10. What is the function of a backbone network?
11. What is a VLAN?
12. List the various attributes to assign VLAN membership?
13. List the three ways to configure a VLAN.
14. List the three methods for inters witch communication.

**Five Mark Question**

1. Explain why connectivity devices are needed in network?
2. Explain the function of a repeater.
3. Explain the function of a bridge.
4. Compare between a repeater & bridge.
5. How does a hub work?
6. What is a bridge? What are its types? Explain any one.
7. Explain the operation of a transparent bridge.
8. Explain spanning tree bridge.
9. Write a note on remote bridge.
10. List the applications of bridges.
11. What is the looping problem in bridges? How is it avoided?
12. Explain the criteria that transparent bridges must meet.
13. Explain the operation of a router.
14. Compare & Contrast bridge and router.
15. List the advantages of bridges over routers.
16. What is the gateway?
17. Explain the types of backbone network.
18. Explain how remote LANs can be connected.
19. Write a note on VLAN.
20. Explain the criteria used to assign membership to VLAN.
21. Write a note on VLAN Configuration.
22. Explain the methods used for communication between switches.
23. Explain the advantages of VLAN.

**Chapter 7**

**One Mark Questions:**

1. What do the following terms mean:

a. Cryptography

b. Cryptology

c. Cryptanalyst

2. List the important elements of a cryptographic process.

3. What are the basic types of Cryptography?

4. What is substitution cipher?

5. What is a transposition cipher?

6. What are the two fundamental cryptographic principles?

7. How is freshness ensured?

8. What is meant by DNS spoofing?

9. What is the poisoned cache?

10. What are RRSets?

11. State the type of records introduced by DNSSec.

12. What is an anonymous remailer?

13. What is a steganography?

14. What is the syntax of a self-certifying URL?

15. What are the mechanisms of preventing DNS Spoofing?

**Five Mark Questions:**

1. Explain substitution cipher with the help of an example.

2. Explain transposition cipher.

3. Explain the basic elements of cryptography with the help of an diagram.

4. What are the advantages & disadvantages of substitution cipher?

5. What are the advantages & disadvantages of transposition cipher?

6. Compare substitution & transposition cipher.

7. Explain the two fundamental cryptographic principles.

8. Write a note on firewalls.

9. Explain the components of a firewall.

10. Explain the threats to web security.

11. Explain the concept of DNS Spoofing. How it is done?

12. Explain the strategies to prevent DNS Spoofing.

13. Write a note on secure DNS.

14. Write a note on Resource Record Sets.

15. Write a note on self certifying URL’s.

16. Explain how mobile code security is achieved for java applets & ActiveX

 controls.

17. What is the difference between java applet & ActiveX control security?

18. Write a note on anonymous remailers?

19. Which social issues are important in network security? Explain any One.

20. Write a note on steganography.

21. Using Caesar Cipher, encrypt the message “Attack tomorrow after lunch”.

22. Apply modified Caesar Cipher with key 123 to the message “Attack tomorrow

 after lunch”.

23. Using key “PRIVATE “apply transposition cipher to the message “Attack

 tomorrow after lunch”.