

B.TECH., DEGREE EXAMINATIONS: APRIL/MAY 2014

(Regulation 2009)

Sixth Semester

INFORMATION TECHNOLOGY

ITY111: TCP/IP and Socket Programming

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10x1=10 Marks)

- The D channel interface requires ____ encoding.
A. NRZ B. NRZI C. LCP D. NCP
- At which layer of the TCP/IP protocol suite would you find a chat program?
A. Transport B. Presentation C. Application D. Session
- Which of the following LAN technologies has the highest capacity?
A. Ethernet B. Fast Ethernet C. Wireless LAN D. Gigabit Ethernet
- Sending too much data too fast for network to handle is
A. End-to-End issue B. Flow Control
C. Congestion Control D. Error Control
- The development of a internationally distributed collection of multimedia files addressed using universal resource locators led to the:
A. Telnet package B. Email system
C. World-wide-web D. FTP package
- _____ is used to differentiate Network ID and Host ID from a given IP address.
A. Subnet Mask B. Default Gateway C. Router D. Pvt.IP
- Which one of the following statements is not true?
A. TCP establishes connection oriented data transmission
B. UDP is suitable for real-time application development
C. I/O multiplexing imposes overhead in networking
D. A TCP server cannot support multiple sockets.
- Which of the following is not a class of client/server processing?
A. Host-based processing B. Server-based processing
C. Client-based processing D. Access-based processing
- SMTP is not concerned with the format or content of messages, except for two exceptions. Which of the following is one of these exceptions?

- SMTP standardizes the message character set as 7-bit ASCII
- SMTP standardizes the message length into multiples of the packet size
- SMTP checks for virus content
- SMTP adds binary attachments to the content, when present

10. Match the following

Column A

Column B

- | | |
|--------|----------------------------|
| 1. TTL | (i)Name server |
| 2. SOA | (ii)resource record |
| 3. NS | (iii)Non-authoritative |
| 4. RR | (iv)Time-to-late |
| | (v)Time-to-live |
| | (vi)start of Authority |
| | (vii)Resource recovery |
| | (viii) start of assessment |
- A. 1(iv),2(viii)3(iii)4(vii) B. 1(v,)2(vi)3(i)4(ii)
C. 1(v,)2(viii)3(i)4(vii) D. 1(v,)2(vi)3(i)4(vii)

PART B (10x2 =20 Marks)

- State the significance and give an example on loop back address.
- An IP header arrives with the starting bits 0100 0100. The destination discards this IP packet. Reason out this scenario.
- What is the maximum length of an IP₄ datagram?
- Specify the port numbers assigned for HTTP and SNMP.
- Define port number and socket addressing.
- How is an end point identified?
- What are RAW sockets? What kind of applications requires raw sockets?
- Mention the use of poll function in I/O processing.
- Differentiate between wireless networks and sensor networks.
- State the significance of DNS.

PART C (5x14=70 Marks)

21. a) Consider a corporate network with IP address 122.20.0.0. Create six subnet works and connect eight systems to each sub network. Assign IP address and subnet mask for all the subnet works and the systems.

(OR)

- b) (i) Explain the operation of TCP sliding window protocol. (7)
(ii) Discuss briefly about the Internet protocol V4. (7)

22. a) Explain Karn's algorithm in detail with an example.

(OR)

- b) List out the features of IPv6 with the general form and also explain in detail about the fragmentation and parsing of IPv6.

23. a) Discuss various socket system calls with example.

(OR)

- b) Explain in detail about byte ordering functions and byte manipulation functions.

24. a) Write a C program for echo server client model using TCP and UDP.

(OR)

- b) Explain the various applications of I/O multiplexing also explain about Poll functions.

25. a) Write a program for client server model that includes the all socket options in the program and also explain the different function used in the program.

(OR)

- b) (i) Compare Socket options ,TCP options and ICMP options . (10)
(ii) What are the functions of the following: (4)
a) gethostbyname
b) gethostbyaddr
c) getservbyname
d) getservbyport
