KUMARAGURU
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Register Number:……..

B.TECH DEGREE EXAMINATIONS: NOV / DEC 2014

(Regulation 2009)

Sixth Semester

INFORMATION TECHNOLOGY

ITY111: TCP/IP and Socket Programming

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. An ICMP protocol reports error to _____

   a) Destination b) Error source

   c) Packet source d) Router

2. An organization has a class B network and wishes to form subnets for 64 departments. The subnet mask would be:

   a) 255.255.0.0 b) 255.255.64.0

   c) 255.255.128.0 d) 255.255.252.0

3. In IPV6 fragmentation and defragmentation is done at _____

   a) End nodes b) Routers

   c) Source d) Switches

4. _____ network is preferred by an education institution

   a) Class A b) Class C

   c) Class B d) Class D

5. I have connected a system to network, what address should I use to check the connectivity?

   a) IP address b) Loop Back address

   c) MAC addresss d) Socket address

6. If a host computer moves from one network to another it's _____ must change

   a) IP b) Socket

   c) MAC d) Port

7. The _____ command is used to attach an address to the socket

   a) Listen b) Bind

   c) Connect d) Socket

8. _____ is a signal sent by the client to the server when it finds that the process for which the data has arrived is not available.

   a) FIN b) SO_CHLD

   c) SO_CLOSE d) RST

9. E-magazine is distributed via.

   a) Unicating b) Webcasting

   c) Multicasting d) Broadcasting

10. ._____ option is used to disable Nagle's algorithm

    a) TCP_NODELAY b) IP_TTL

    c) TCP_KEEPALIVE d) TCP_MAXSEG

PART B (10 x 2 = 20 Marks)

11. Present the frame format of ARP.
12. Define sub networking.
13. State Nagle's algorithm and its significance over networking.
14. List any two scenarios on loss of packets for which ICMP error reporting is not done.
15. Name the elements of TCP socket address.
16. Differentiate stream and datagram sockets.
17. List the limitations of the *close* function that are overcome by the *shutdown* function.
18. Present a timeline diagram on TCP connection termination.
19. What is the use of SO_ REUSEADDR option?
20. Show the representation of DNS hostent structure

PART C (5 x 14 = 70 Marks)

21. a) (i) Working of Internet requires different addresses at different layers. Outline the need, format, and function of the associated protocols. (7)

    (ii) A company is granted the site address 181.56.0.0 (class B). The company needs 1000 subnets. Design the subnets. (7)

(OR)

    b) (i) List and brief the significance of ICMP control messages. (7)

    (ii) Describe the phenomenon of class less addressing. Comment on longest mask matching happens here. (7)

22. a) (i) Describe the finite state machine for TCP operation. (7)

(ii) Explain how silly window syndrome can be avoided in TCP. (7)

(OR)

b) Elaborate IPV6 extension headers and show how they enhance the mechanism against IPV4.

23. a) (i) Demonstrate how Internet handles the difference in byte order used by the source and destination. (7)

(ii) Compare Iterative and concurrent server operations. (7)

(OR)

b) Develop a client server application to find the sum of n numbers using socket functions. Illustrate the communication paradigm of client and server.

24. a) (i) Estimate how the round trip time computation is done by TCP and discuss how retransmission policy is altered based on RTT. (7)

(ii) Analyse the way in which a server responds to a client after it crashes and reboots. (7)

(OR)

b) (i) Analyse the reasons for which TCP and UDP should use different commands for reading and writing. (7)

(ii) Compare various I/O Models describing the advantage of each model over other. (7)

25. a) Summarize various UDP and TCP socket options and their utility.

(OR)

b) (i) Choose and explain the appropriate socket option to replace shutdown function. (7)

(ii) Explain the hostent structure and the network constructs used by DNS to resolve host names. (7)

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