KINGS

COLLEGE OF ENGINEERING

DEPARTMENT OF INFORMATION TECHNOLOGY

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QUESTION BANK

SUB.CODE : **IT1352.**
SUB.NAME : **NETWORK PROGRAMMING & MANAGEMENT.**
YEAR / SEM /SEC : **III / V I/ A& B.**
DEGREE / BRANCH : **B.Tech / IT.**
BATCH : **2012-2014**
REGULATION : **2008- ANNA UNIVERSITY CHENNAI**

UNIT- I

ELEMENTARY TCP SOCKETS

PART A (2 MARKS)

1. Compare TCP and UDP
2. What is the use of ARP and RARP?
3. What is IANA?
4. What is mean by well known port?
5. Compare physical, logical and port address.
6. Write a program to print its own process ID.
7. Write a program to print the process ID of parent and child.
8. Define socket. Give structure of socket.
9. Define the types of socket.
10. Explain the fields present in sockaddr_in structure.
11. Specify the fields in sockaddr_in6.
12. What are the data types used in client server program?
13. What is network byte order?
14. What is the purpose of inet_aton function?
15. What are the functions designed for byte order transformation?
16. How a socket is uniquely identified?
17. What is the purpose of bind and connect?

18. What is the need for listen and accept system calls?
19. Specify address conversion functions.
20. Explain the operation of fork () system call.
21. What are the functions used for byte manipulation operations?
22. What is socket abstraction?
23. Compare various socket address structure.
24. Write short notes on sendto and recvfrom system call.
25. Differentiate iterative and concurrent server.

PART –B (16 MARKS)

1. Explain in detail TCP/IP protocols. (16)
2. (a) Compare physical, logical and port address. (06)
   (b) Explain byte manipulation functions (10)
3. (a) What are the data types used in client-server programs? Explain. (08)
   (b) What is the purpose of inet_addr and inet_pton functions? Explain. (08)
4. (a) What is socket abstraction? Explain. (06)
   (b) Compare various socket address structures. (10)
5. (a) How a socket is uniquely identified? (08)
   (b)Explain address conversion functions (08)
6. Explain the following system calls. (16)
7. Explain the following system calls. (16)
8. Explain the required socket functions for implementing a UDP client / server application? (16)
9. Write a socket program to implement TCP client server? (16)

UNIT- II

APPLICATION DEVELOPMENT

PART A (2 MARKS)

1. Define posix?
2. Define signal?
3. Mention the ways to send a signal?
4. Define Disposition?
5. What are the three choices for disposition?
6. Specify general format for signal function?
7. What is Handling SIGCHLD signal?
8. What is slow system call?
9. What is meant by wait?
10. What is meant by waitpid?
11. What is client termination?
12. Specify termination of server process?
13. What is the crashing of TCP server host?

14. What are the boundary conditions for crashing of TCP server host?
15. What is server shutdown?
16. What is meant by polling?
17. What is I/O multiplexing model?
18. Write any one advantage of I/O multiplexing model?
19. Write any one disadvantage of I/O multiplexing model?
20. Write any two types of I/O operation?
21. What is meant by synchronous I/O with example?
22. What is meant by Asynchronous I/O with example?
23. What is select function?
24. Describe the general format of select function?
25. Define wait forever?
26. What is Don't wait at all?
27. What are the conditions of the descriptor to become ready?
28. What are the steps involved for socket has exception pending?
29. What is the difference between shutdown and close function?
30. What is poll function?

PART –B

1. Explain the steps involved in crashing of server process and server host? (16)
2. What are the use of I/O multiplexing and Explain the types of I/O model in detail. (16)
3. Write a socket program to implement TCP echo client /server application? (16)
4. Explain the concept of posix signal handling? (16)
5. Write a socket program to implement TCP echo client /server application with multiplexing? (16)
6. Discuss the following scenario of server operations.
    a. Crashing of server host (06)
    b. Crashing and rebooting of server host (06)
    c. Shutdown of server host (04)

UNIT- III

SOCKET OPTIONS, ELEMENTARY UDP SOCKETS

PART A (2 MARKS)

1. What are the various ways to get and set the options that affect a socket?
2. Give the general format for getsockopt.
3. Give the general format for setsockopt.

4. What are the following socket options inherited by a connected TCP socket from the listening socket?
5. What is meant by generic socket option?
6. What is the purpose of SO_BROADCAST option?
7. Give the characteristics of SO_DEBUG.
8. What is the use of SO_DONTROUTE?
9. Write notes on SO_ERROR socket option.
10. Specify the function of SO_LINGER.
11. What is the purpose of SO_OOBINLINE?
12. What is the function of SO_REUSEPORT?
13. What are called IPV4 socket options?
14. What do you mean by IP_HDRINCL socket?.
15. What are called ICMPV6 socket options?
16. What are the options of IPV6?
17. What are the options of TCP socket?
18. What is the function of ICMP6_FILTER?
19. Define Nagle's algorithm.
20. Define a Domain Name System.
21. What are called resource records?
22. What are the types of resource records?
23. Give the syntax of gethostname function.
24. Specify the functions of gethostbyname function.
25. Define gethostbyaddr function.
26. Give the syntax for getservbyname function
27. Specify the functions of getservbyport system call.

PART –B

1. Write a socket program to implement UDP echo client /server application? (16)
2. What is meant by generic socket option? Explain in detail. (16)
3. Explain the following socket options. (16)
4. (a) Write a program to display the port number from a given service name. (08)
   (b) Write a program to find the IP address from a given host name. (08)
5. Explain the following socket options. (16)

UNIT- IV

ADVANCED SOCKETS

PART A (2 MARKS)

1. What is a dual stack?
2. What is the use of IPV6 address testing macros?
3. What is the need of IN6_IS_ADDR_V4MAPPED macro?

4. What is IPV6_ADDRFORM socket option?
5. Why thread is called light weight processes?
6. What is a Pthread?
7. How is a thread created?
8. How is a thread terminated?
9. What is a common technique for making the function thread safe?
10. Name some of the thread safe functions.
11. What is concurrent or parallel programming?
12. What are the functions that is used to lock and unlock the mutex?
13. Why is a mutex always associated with a condition variable?
14. Define proto structure.
15. Establish signal handler for SIGALRM.
16. Differentiate IPV4 and IPV6 raw socket.
17. Give the concept of Raw Socket Input.
18. Define latency.
19. What is the function of PING (Packet Internet Grosper)?
20. What are the information returns by the Response of Ping program?
21. How the Kernel perform three tests when receives IP datagram?
22. What is the function of trace route utility?
23. What are the two sockets used in trace route program?
24. Define mutex.

PART B (16 MARKS)

1.	(a) Define thread. Give the syntax for creating the thread.	(08)
	(b) Write a TCP based echo client / server program using thread.	(08)
2.	(a) Explain the steps involved in creating a raw socket	(08)
	(b) Explain the operation of ping program	(08)
3.	Explain the concept of IPV4 and IPV6 interoperability.	(16)
4.	Explain the concept of mutual exclusion with suitable diagram.	(16)
5.	Explain the operations of trace route program in detail.	(16)

UNIT- V

SIMPLE NETWORK MANAGEMENT

PART A(2MARKS)

1. Define SNMP.
2. Define network management system.
3. SNMP uses TCP. Justify.
4. Name the key elements of network management.
5. Define Management agent.
6. Define Management information base.
7. Specify the advantages of trap-directed polling.
8. Define Agent Function.

9. Define proxy.
10. Define structure of Management information.
11. What do you mean by object instance?
12. What are all the information stored in the tcpConnTable?
13. What is the purpose of system group ip group?
14. What are the operations supported by SNMP.
15. What is the get request PDU?
16. What are the limitations of using SNMP?
17. What is a Trap PDU?
18. What are the types of Threats?
19. Name the Network Monitoring Information
20. What is MTBF?
21. What are the key capabilities of SNMP?
22. State the features of SNMPV3.

PART B (16 MARKS)

1.	Define SNMP. Describe the architecture of SNMP.	(16)
2.	Explain the message format of SNMP	(16)
3.	What are the steps involved in transmission and reception of an SNMP Message and Explain in detail	(16)
4.	Write short notes on SNMP Protocol Specification.	(08)
5.	Describe the concept of standard MIBs.	(08)

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