**E.G.S.PILLAY ENGINEERING COLLEGE, NAGAPATTINAM**

**DEPARTMENT OF MCA**

**CYCLE TEST-II**

**Sub. Code/ Name: MC7404/Network Programming**

**Date :23.03.2016 Max time: 3 hrs**

**Staff Name: Ms.K.Lakshmipriya Max Mark: 100**

**PART-A**

**ANSWER ALL QUESTIONS (10\*2=20)**

1. Give the syntax of getsockopt and setsockopt functions .
2. Name the two socket options for TCP
3. What is the use of SO\_BROADCAST option?
4. What is the use of SO\_KEEPALIVE option
5. Explain Nagles algorithm
6. Write the following functions with syntax i) recvfrom() ii) sendto()
7. Explain getservbyport() function with syntax
8. Write the function to create a thread with syntax
9. Write the two functions related to mutex with syntax
10. Write the two functions related to mutex with syntax

**PART-B (5\*16=80)**

1. a) Discuss in detail about the socket options available for the stream sockets and datagram sockets

(or)

b) Explain generic socket options in detail

12. a) Design and develop an echo Client/Server system using UDP sockets.

(or)

b) Write short notes on i) DNS (ii) Resource Records (iii) Resolvers and Name servers.

13. a) Write a C program to implement a server that handles TCP and UDP using multiplexing and Explain

(or)

b) Explain the dual stack host with IPv6 Server that handle both IPv4 and IPv6 clients with a neat diagram

14. a) Write short notes on (i) Mutex with related functions (ii) Condition variables and related functions

(or)

b) Write a C program to implement PING command

15. a) Write a trace route program using C

(or)

b) Explain various functions related to threads.

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**MODEL TEST**

Sub. Code/ Name: MC7404/ Network Programming Date :

Staff Name: Ms.K.Lakshmipriya Max time: 3 hrs

Max Mark: 100

**PART-A**

**ANSWER ALL QUESTIONS**

1. What are the common shells in use in unix system? How does the system decide which shell is to be executed?
2. Compare and contrast system call & library function.
3. The INADDR-ANY and INAADR-BROADCAST constant defined by<netinet/in.h> header are in host byte order. justify the statement
4. What happens when close is called on a TCP Socket?
5. Enumerate the steps that happen when server host is shutdown.
6. Make a comparison of five I/O Models.
7. Diagrammatically summarise the two possible class to shutdown, the three possible calls to close and the effect on a TCP.
8. Write a program to print the canonical name of a host
9. Mention the rules to be used by dual-stack when dealing with listening sockets
10. Differentiate pthread\_cond\_signal and pthread\_cond\_broadcast.

**PART-B**

1. a) Write short notes on classical IPCs namely pipes, FIFOs, message queue, semaphore, shared memory

or

b) Eloborate on process relationship using process group & session

12. a) Diagrammatically show the typical scenario that takes place between a TCP client and server & explain the functions used

Or

b) What are the ways to handle multiple clients? Write a program for a TCP server to handle 5 clients at the same time.

13. a) Write a TCP echo client-server program that get input and display text.

Or

b) explain with an example a TCP echo server that handles multiple clients using select.

14. a) Elaborate on the IP and TCP socket options

Or

b) Write a UDP echo client that prints the number of sentences and bytes that are read or written.

15. a) Using the TCP echo server explain the concept of threads

Or

b) Write a ping program that work on IPV4 and IPv6