**UNIT 7 Multithreaded Programming- Assignment**

1(a) Differentiate between multithreaded programming and single threaded programming.

(b) Illustrate pthread create( ) and pthread kill( ) function prototypes with an

example. [6+9]

2.List and explain various POSIX APIs for mutex locks manipulation with example [15]

 (or)

 Explain thread synchronization with mutex locks with example .

3List and explain various POSIX APIs for semaphores with example [15]

 (or)

 Explain thread synchronization with semaphores with example .

4. Write a short note on the following:

 (a) Light Weight Processes

 (b) Semaphores

 (c) Mutexes

1. Threads. [15]

5(a) What are the benefits of using multithreaded programming?

 (b) Whar are the thread attributes ?Explain the APIs used to specify the attributes for a thread. [6+9]

6What is Deadlock? Explain the situation when will the mutex lock creates a deadlock condition within a process and also give the solution to prevent such deadlock condition. [15]

7(a) What are the merits and demerits of multithreaded programming?

 (b) Explain the relationships of threads, LWPs and hardware processes with the help of a neat diagram. [6+9]

8(a) Why do each lightweight process need a separate kernel stack?

(b) Describe the problems with single threaded programming and how it is over come by multithreaded programming. [6+9]

9Write short notes on the following?

 a) POSIX thread API’s

 b) Linux API’s for shared memory

 c) Process and Threads (differentiate)

 10 a) Give the structure of a thread.

b) Describe posix thread APIs for basic thread manipulation.

11a) Explain thread structure and uses?

 b) Differences between thread and process

12 (a) Why do each lightweight process need a separate kernel stack?

(b) Describe the problems with single threaded programming and how it is over-

come by multithreaded programming. [6+9]

13 Explain various APIs available in POSIX.1b for increasing and decreasing a semaphore

value with an example. [15]