**Operating System**

**(CT-353)**

Lab no 05

**1) Implement the above code and paste the screen shot of the output.**

#include <semaphore.h>

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <pthread.h>

sem\_t x, y; pthread\_t tid;

pthread\_t writerthreads[100], readerthreads[100]; int readercount = 0;

void \*reader(void \*param) { sem\_wait(&x); readercount++;

if (readercount == 1) {

sem\_wait(&y);

}

sem\_post(&x);

printf("%d reader is inside\n", readercount);

usleep(3);

sem\_wait(&x); readercount--; if (readercount == 0) {

sem\_post(&y);

}

sem\_post(&x);

printf("%d Reader is leaving\n", readercount + 1); return NULL;

}

void \*writer(void \*param) { printf("Writer is trying to enter\n"); sem\_wait(&y); printf("Writer has entered\n"); sem\_post(&y); printf("Writer is leaving\n"); return NULL;

}

int main() { int n2, i; printf("Enter the number of readers:"); scanf("%d", &n2);

int n1[n2]; sem\_init(&x, 0, 1); sem\_init(&y, 0, 1);

for (i = 0; i < n2; i++) {

pthread\_create(&writerthreads[i], NULL, reader, NULL); pthread\_create(&readerthreads[i], NULL, writer, NULL);

}

for (i = 0; i < n2; i++) {

pthread\_join(writerthreads[i], NULL); pthread\_join(readerthreads[i], NULL);

}

return 0;

}

**Output**

