Started on	Wednesday, 6 April 2022, 9:20 AM
State	Finished
Completed on	Wednesday, 6 April 2022, 9:40 AM
Time taken	19 mins 59 secs
Marks	31.00/40.00
Grade	**11.63** out of 15.00 (**78**%)

Question **1**

Correct

Mark 2.00 out of 2.00

```
#include <stdio.h>
#include <pthread.h>

void *thread_fn(void *arg){
        long id =(long) arg;
        printf("Starting thread %ld\n", id);
        sleep(5);
        printf("Exiting thread %ld\n", id);
        return NULL;
}

int main(){
        pthread_t t1,t2;

        pthread_create(&t1,NULL,thread_fn,(void *)1);
        pthread_create(&t2,NULL,thread_fn,(void *)2);
        pthread_join(t1,NULL);
        pthread_join(t2,NULL);
        printf("Exiting main\n");
        return 0;
}
```

a. Starting thread 1
Existing Thread 1
Starting thread 2
Existing main
Existing Thread 2

b. Starting thread 1 ✔
Starting thread 2
Existing Thread 1
Existing Thread 2
Existing main

c. Starting thread 2
Starting thread 1
Existing Thread 1
Existing Thread 2
Existing main

d. Starting thread 1
Existing Thread 1
Starting thread 2
Existing Thread 2

Existing main

The correct answer is:
Starting thread 1

Starting thread 2

Existing Thread 1

Existing Thread 2

Existing main

Question **2**

Correct

Mark 4.00 out of 4.00

Match the following in the pthread_create functions.

2nd argument — specify several properties of the thread (stack size, scheduling information) ✔

1st argument — Thread id ✔

3rd argument — name of the function where the new thread will begin execution ✔

4th argument — arg which is a pointer to the arguments to the start routine function ✔

The correct answer is:
2nd argument → specify several properties of the thread (stack size, scheduling information),

1st argument → Thread id,

3rd argument → name of the function where the new thread will begin execution, 4th argument → arg which is a pointer to the arguments to the start routine function

Question **3**

Correct

Mark 1.00 out of 1.00

fork() and exec() system is defined in unistd ✔ .h header file.

The correct answer is: unistd.h

Question **4**

Correct

Mark 1.00 out of 1.00

To display process tree, which command is used

- a. pstree ✔
- b. lstree
- c. proc_tree
- d. ps_tree

The correct answer is:
pstree

Question **5**

Correct

Mark 5.00 out of 5.00

Match the follwing

getppid ()	parent process id of the process ✔
getpid()	process id of the process ✔
exec()	replaces the current running process with a new process. ✔
wait()	holds for a child process from the current process to terminate. ✔
fork()	creates child process ✔

The correct answer is:
getppid () → parent process id of the process,

getpid() → process id of the process,

exec() → replaces the current running process with a new process.,

wait() → holds for a child process from the current process to terminate.,

fork() → creates child process

Question **6**

Correct

Mark 1.00 out of 1.00

Which statement is not correct regarding wait system call?

(1) stores the termination status of the terminated child (the value returned by main) into variable status,

(2) returns the process number of the terminated child process.

(3) defined in unistd.h

(4) waits for a child process of the current process to terminate.

- a. (1), (2) and (4) only
- b. (2) and (4) only
- c. (1) , (3) and (4) only
- d. (1), (2) and (3) only
- e. (3) only ✔

The correct answer is:
(3) only

Question **7**

Correct

Mark 1.00 out of 1.00

pthread_join () defined in pthread library has same functionality as wait() function method.

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **8**

Correct

Mark 2.00 out of 2.00

```
#include <pthread.h>
 #include <stdio.h>
 #define NUM_THREADS 3
void *PrintHello(void *threadid)
{
	printf("\n%d: Hello World!\n", threadid);
	pthread_exit(NULL);

}

int main ()
{
	pthread_t threads [NUM_THREADS];
	int rc, t;

	for(t=0; t < NUM_THREADS; t++)
	{
		printf ("Creating thread %d\n", t);
		rc = pthread_create (&threads[t], NULL, PrintHello, (void *) t );

		if (rc)
		{
			printf("ERROR; return code from pthread_create() is %d\n", rc);

			exit(-1);
		}
	}
	printf("Hello\n");


}
```

Which option is correct for this question.

a. Creating thread 0
Creating thread 1
0: Hello World!
1: Hello World!
Hello!
Creating thread 2
2: Hello World!

b. Creating thread 0
Creating thread 1
Creating thread 2
0: Hello World!
1: Hello World!
Hello!
2: Hello World!

c. Creating thread 0
Creating thread 1
Hello!
0: Hello World!
1: Hello World!
Creating thread 2
2: Hello World!

d. Creating thread 0
0: Hello World!
Creating thread 1
1: Hello World!
Creating thread 2
2: Hello World!
Hello!

e. All of the option ✔

f. Creating thread 0
Creating thread 1
Creating thread 2
0: Hello World!
Hello!
1: Hello World!

The correct answer is: All of the option

Question **9**
Correct
Mark 1.00 out of 1.00

- The header file needs to be used for pthread programming is "pthreads.h".

Select one:

True

False ✔

The correct answer is 'False'.

Question **10**

Correct

Mark 1.00 out of 1.00

pthread_create (&threads_id, NULL, Hello_world, NULL); creates a thread and called Hello_world with all attributes set to NULL.

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **11**

Correct

Mark 1.00 out of 1.00

Which command is not correct for compiling the "pthread program"?

- 1. gcc -pthread filename.c
- 2. Every option is correct
- 3. gcc filename.c -o filename ✔
- 4. gcc -pthread filename.c -o filename

The correct answer is:
gcc filename.c -o filename

Question **12**

Correct

Mark 2.00 out of 2.00

```
#include <stdio.h>
#include <pthread.h>

void *thread_fn(void *arg){
        long id =(long) arg;
        printf("Starting thread %ld\n", id);
        printf("Exiting thread %ld\n", id);
        return NULL;
}

int main(){
        pthread_t t1,t2;

        pthread_create(&t1,NULL,thread_fn,(void *)1);
        pthread_join(t1,NULL);
        pthread_create(&t2,NULL,thread_fn,(void *)2);
        pthread_join(t2,NULL);
        printf("Exiting main\n");
        return 0;
}
```

Multiple answers are correct.

a. Starting thread1
Starting thread 2
Existing thread 2
Existing thread 1
Existing main

b. Starting thread1
Starting thread 2
Existing thread 1
Existing thread 2
Existing main

c. Starting thread1
Starting thread 2
Existing main
Existing thread 2
Existing thread 1

d. Starting thread1 ✔
Existing thread 1
Starting thread 2

Existing thread 2

Existing main

The correct answer is:

Starting thread1

Existing thread 1

Starting thread 2

Existing thread 2

Existing main

Question **13**

Correct

Mark 1.00 out of 1.00

” % ” is the default prompt of " C " Shell.

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **14**

Correct

Mark 1.00 out of 1.00

"clean" command is used to clear terminal?

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **15**

Correct

Mark 1.00 out of 1.00

Among the arguments passed to "pthread_create" the final argument, is

(a) Attributes of the thread
(b) Name of the thread
(c) Data being passed to the thread
(d) Thread id

- 1. (c) ✔
- 2. (d)
- 3. (b)
- 4. (a)

The correct answer is:
(c)

Question **16**

Correct

Mark 1.00 out of 1.00

pthread_self returns

- a. The Thread id ✔
- b. The Thread attributes
- c. Thread running time
- d. Thread data

The correct answer is:
The Thread id

Question **17**

Correct

Mark 1.00 out of 1.00

Which command is used for removing non-empty directories in Linux system?

- a. rm "directory name"
- b. rm -r "directory name" ✔
- c. rm "directory name"
- d. rmdir -r "directory name"

The correct answer is:
rm -r "directory name"

Question **18**

Incorrect

Mark 0.00 out of 4.00

Match the followings:

Used to change the present working directory.	mkdir ✖
print working directory	ls ✖
list out all the files in the directed folder.	pwd ✖
Creates a new directory	cd ✖

The correct answer is:
Used to change the present working directory. → cd,

print working directory → pwd,

list out all the files in the directed folder. → ls,

Creates a new directory → mkdir

Question **19**

Correct

Mark 1.00 out of 1.00

Default prompt for Bourne Shell is _____.

- a. %
- b. $ ✔
- c. !
- d. #

The correct answer is:
$

Question **20**

Correct

Mark 1.00 out of 1.00

```
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>
#include <sys/wait.h>
#include <stdlib.h>
int main()
{
        pid_t pid;
        pid=fork();
        int k;
        wait(NULL);

        if(pid==0)       {

                printf("child process id %d\n", getpid());

        }

        else {

                printf(" process id %d\n", getpid());
        }
        return 0;
}
```

In the above code, will you able to print always the "CHILD ID FIRST THEN THE PARENT ID"?

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **21**

Correct

Mark 1.00 out of 1.00

Which of the following functions can be used for synchronization between threads

- a. pthread_self
- b. pthread_join ✔
- c. pthread_cancel
- d. pthread_exit

The correct answer is:
pthread_join

Question **22**

Incorrect

Mark 0.00 out of 2.00

```
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>

int doWork(){
        fork();
        fork();
        printf("Hello world!\n");
        printf("Hello world!\n");
        printf("------------\n");


}
int main() {
        doWork();
        printf("Hello world!\n");
        exit(0);
}
```

How many times "Hello world!" will be printed?

Answer: 11 ✖

The correct answer is: 12

Question **23**

Incorrect

Mark 0.00 out of 2.00

```
#include <stdio.h>
#include <sys/types.h>
#include <unistd.h>

void forkexample()
{
    int  x = 1, y =2;

    if (fork() != 0) {
        wait(NULL);
        x=y;
        printf("Parent has x = %d\n", - -x);

    }
    else{
        printf("Child has x = %d\n", - -x);
        int y=x;
        printf("Child has y=%d\n", ++y);
    }
}
int main()
{
    forkexample();
    return 0;
}
```

Which one is correct?

1. Child has x = 0
   Child has y=1
   Parent has x = 2

2. Parent has x = 1
   Child has x = 0
   Child has y=1

3. Parent has x = 1
   Child has x = 0
   Child has y=1

4. Child has x = 0
   Child has y=1
   Parent has x = 1

The correct answer is: Child has x = 0
Child has y=1
Parent has x = 1

Question **24**

Correct

Mark 1.00 out of 1.00

exec() system call is defined under "sys/types.h" header file.

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **25**

Not answered

Marked out of 1.00

- The data type used for storing the thread id is

a. None

b. pthread_id

c. pthreads_t

d. pthread_t

The correct answer is:
pthread_t

◄ Mid-Sem Exam

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