Assignment 4

- **Question 1**

1 out of 1 points

Which of the following would be an acceptable signal handling scheme for a multithreaded program?

Correct Answer:
All of the above

- **Question 2**

1 out of 1 points

Thread-local storage is data that ____.

Correct Answer:
is unique to each thread

- **Question 3**

1 out of 1 points

Windows uses the ____.

Correct Answer:
one-to-one model

- **Question 4**

1 out of 1 points

In multithreaded programs, the kernel informs an application about certain events using a procedure known as a(n) ____.

Correct Answer:
upcall

- **Question 5**

1 out of 1 points

_____ is not considered a challenge when designing applications for multicore systems.

Correct Answer:
Ensuring there is a sufficient number of cores

- **Question 6**

1 out of 1 points

A ____ provides an API for creating and managing threads.

Correct Answer:
thread library

- **Question 7**

1 out of 1 points

The _____ model multiplexes map many user-level threads to a smaller or equal number of kernel threads.

Correct Answer:

many-to-many

- **Question 8**

1 out of 1 points

The _____ model maps many user-level threads to one kernel thread.

Correct Answer:
many-to-one

- **Question 9**

1 out of 1 points

The _____ model maps each user-level thread to one kernel thread.

Correct Answer:
one-to-one

- **Question 10**

1 out of 1 points

The _____ model allows a user-level thread to be bound to one kernel thread.

Correct Answer:
two-level

- **Question 11**

1 out of 1 points

The most common technique for writing multithreaded Java programs is _____.

Correct Answer:
implementing the `Runnable` interface and defining its `run()` method

- **Question 12**

1 out of 1 points

A _____ uses an existing thread — rather than creating a new one — to complete a task.

Correct Answer:
thread pool

- **Question 13**

1 out of 1 points

According to Amdahl's Law, what is the speedup gain for an application that is 60% parallel when we run it on a machine with four processing cores?

Correct Answer:
1.82

- **Question 14**

1 out of 1 points

_____ involves distributing tasks across multiple computing cores.

Correct Answer:
Task parallelism

- **Question 15**

1 out of 1 points

_____ is a formula that identifies potential performance gains from adding additional computing cores to an application that has a parallel and serial component.

Correct Answer:
Amdahl's Law

- **Question 16**

1 out of 1 points

When OpenMP encounters the `#pragma omp parallel` directive, it ____.

Correct Answer:
creates as many threads as there are processing cores

- **Question 17**

1 out of 1 points

A traditional (or heavyweight) process has a single thread of control.

Correct Answer: True

- **Question 18**

1 out of 1 points

A thread is composed of a thread ID, program counter, register set, and heap.

Correct Answer: False

- **Question 19**

1 out of 1 points

Each thread has its own register set and stack.

Correct Answer: True

- **Question 20**

1 out of 1 points

It is possible to have concurrency without parallelism.

Correct Answer: True