1. Traps such as system calls are unintentinal synchronous exceptions. (Additional hints: Synchronous excpetions include traps, faults, and aborts. Among them, faults are unintetional but possible recoverable exceptions.)
   (2점)

1) True

2) False

2. Parity check and machine check are examples of faults. (Additional hints: Synchronous excpetions include traps, faults, and aborts. Among them, faults are unintetional but possible recoverable exceptions.)
   (2점)

1) True

2) False

3. When a fault occurs, the fault handler either re-executes the faulting instruction or aborts.
   (2점)

1) True

2) False

4. What is the running instance of the program?
   (2점)

5. _____ is a kernel mechanism that gives each program a private address space, making it appear that each program uses the main memory exclusively.
   (2점)

6. fork() return 0 to the parent process and child's PID to the child process.
   (2점)

1) True

2) False

7. Inter-process communication (IPC) refers to mechanisms that allow communications between multiple processes on the same machine.
(2점)

1) True

2) False

8. Explain what happens in a context switch in the kernel.
(3점)

9. Consider the following program. Each process produces outputs in a form of strings composed of letters. List all possible outputs printed on screen when executed. Also, justify your answers.

```
#include <unistd.h>
#include <sys/wait.h>
// W(A) means write(1, "A", sizeof "A"), which will display "A"
#define W(x) write(1, #x, sizeof #x)

int main() {
  W(A);
  int child = fork();
  W(B);
  if(child) wait(NULL);
  W(C);
  return 0;
}
```
(6점)

10. Explain conditions when a function is async-signal-safe.

(3점)

11. Iterative servers process one request at a time. In this iterative server, while a client exchanges messages with the server, the second client is blocking. However, the second client was still able to send a message even though the server did not accept the connection request. Where and how is the message sent by the second client managed?
(3점)

12. There are three approaches for writing concurrent servers; What are they? Explain each approach and compare them.
(6점)

13. Define what it means for a function to be thraed-safe.

(3점)

14. Thread-safe functions are reentrant.

(2점)

1) True

2) False