

# HOMEWORK 4 – CS O449

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**Question 1:** Because a divide-by-zero error is caused by a program instruction at a specific place, it is best considered what, of the following.

**A:** synchronous, hardware exception   **B:** asynchronous, hardware exception

**C:** synchronous, software trap   **D:** asynchronous, software trap

Answer: ?

**Question 2:** If we have 6 processes in a round-robin scheduler with a quantum of 20ms a piece, and we increase the priority of one process such that it now runs for 100ms, how much time of the entire scheduling cycle does the prioritized process run?

**A:** 20%

**B:** 30%

**C:** 40%

**D:** 50%

**E:** 60%

**F:** 70%

**G:** 80%

**H:** 90%

Answer: ?

**Question 3:** Of the following, what is not copied as part of a process fork operation?

**A:** process id

**B:** most cpu registers

**C:** process .text section

**D:** process .data section

Answer: ?

**Question 4:** Your program spawns a process and then the main process exits before that child process ends. This is an example of what of the following:

**A:** init process

**B:** race condition

**C:** zombie process

**D:** orphan process

Answer: ?

**Question 5:** You want to run the “unzip” program as a relative path while searching the system paths. You want to run that unzip program alongside your own program and then only proceed when it is done. Which pattern would you use?

(The arguments have been omitted for clarity; I only want to know the particular functions and the order of the calls.)

**A:** `execv()` then `fork()` then `wait()`

**B:** `fork()` then `execvp()` then `wait()`

**C:** `execvp()` then `wait()` then `fork()`

**D:** `fork()` then `execv()` then `wait()`

**E:** `wait()` then `fork()` then `execv()`

**F:** `wait()` then `fork()` then `execvp()`

**G:** `fork()` then `wait()` then `execv()`

**H:** `fork()` then `wait()` then `execvp()`

Answer: ?

**Submission:**

Please modify this document and answer in the provided spaces and submit your completed document as a PDF to Gradescope. You may write in your answers and scan them in. Or carefully modify this document in Word and export to PDF.