

CS & IT ENGINEERING

Operating System

Intro & Background

DPP 02 Discussion Notes



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A stylized illustration of a laptop with a blue frame and an orange base. The screen is white and displays the text 'TOPICS TO BE COVERED' in a dark blue, hand-drawn font. The laptop is positioned on the left side of the slide.

TOPICS TO BE COVERED

A dashed orange line with arrowheads at both ends, connecting the laptop screen to the list items.

01 Question

02 Discussion

Q.1

Which of the following are allowed in kernel mode only?



[MSQ]

- A. Enabling / Disabling interrupts. ✓
- B. Reading the system's time. ✗ *User mode also*
- C. Context switching. ✓
- D. Clear the memory. ✓

Q.2

Which of the following is/are correct?



[MSQ]

☒ A.

To switch from kernel mode to user mode, the mode bit should be 1.

☐ B.

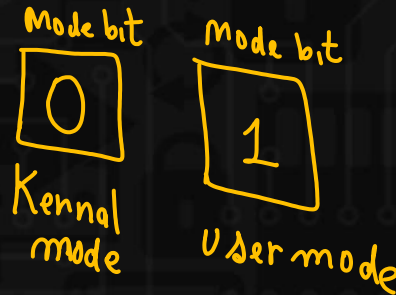
To switch from kernel mode to user mode, the mode bit should be 0.

☐ C.

To switch from user mode to kernel mode, the mode bit should be 1.

☒ D.

To switch from user mode to kernel mode, the mode bit should be 0.



Q.3

Match the following:

- (i) User mode
- (ii) Kernel mode

- 1) Atomic
- 2) Mode bit 0
- 3) Privileged
- 4) Preemptive

User mode: Non-atomic
: Non-Privileged
Mode bit = 1
Preemptive
[MCQ]

(i) - (4)
(ii) - (1), (2), (3)

A.

(i) - 2, 3; (ii) - 1, 4

B.

(i) - 2, 1; (ii) - 3, 4

C.

(i) - 2, 1, 4; (ii) - 3

D.

(i) - 4; (ii) - 1, 2, 3

Q.4

System call is used to access_____.



[MCQ]

- A. Application functionality.
- B. I/O functionality.
- ☒ C. Operating system functionality.
- D. None of these.

Q.5



Consider the following statements:

- (i) Pre-defined functions start executing in kernel mode. *False*
- (ii) User-defined functions start executing in user mode. *True*

Which of the following is correct?

[MCQ]

- A. Only (i) is correct.
- ☒ B. Only (ii) is correct.
- C. Both (i) and (ii) are correct.
- D. Both (i) and (ii) are incorrect.

Q.6

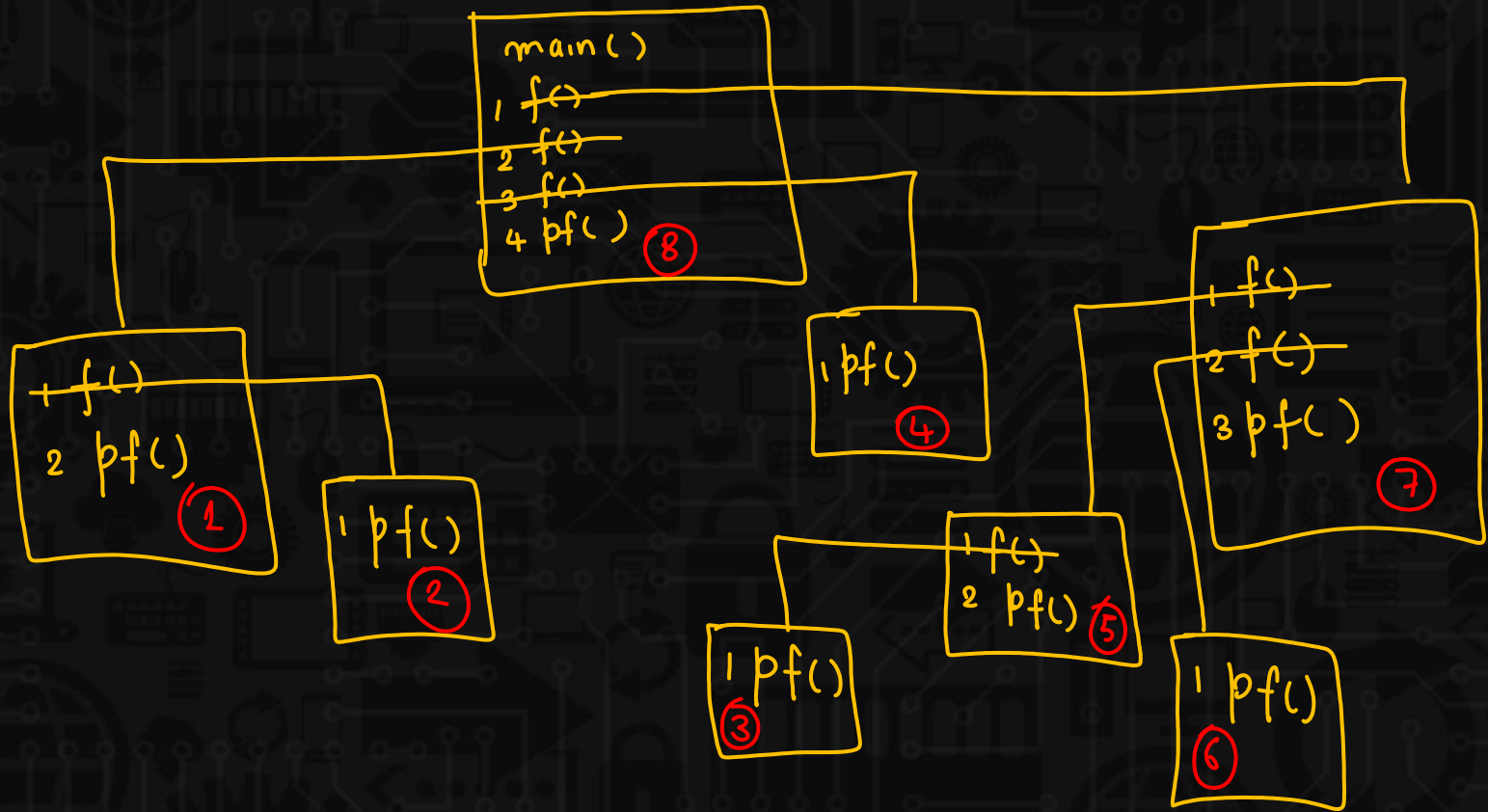
Consider the following program:

```
main()
{
    fork()
    fork()
    fork()
    printf("GATE "2023");
    return 0;
}
```

8

How many times GATE 2023 will get printed?

[NAT]



Q.7

Mode bit is present in _____.



[MCQ]

A.

Main Memory

B.

Disk

C.

Cache

☒ D.

Register

Program Status
Word
(PSW)

Q.8

At system boot time, the hardware starts in ____.



[MCQ]

A.

Kernel mode

B.

User mode

C.

Operating mode

D.

Disk mode

