



# Unit 10 - Week 9

## Course outline

### How to access the portal

### Week 1

### Week 2

### Week 3

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### Week 9

● Lecture 29 (Part 1) - Multilevel Paging

● Lecture 29 (Part 2) - Multilevel Paging

● Lecture 30 - Page Frame Allocation, Beledy's Anomaly

● Lecture 31 - Paging, Cache

○ Quiz : week 9 assignment

○ Assignment 9 Solutions

○ Feedback for week 9

### Week 10

### Week 11

## week 9 assignment

### Assignment Week 9

1) The Translation Look Aside Buffer (TLB) stores 1 point

- Branching data
- Map of Cache data and RAM data
- Map of Physical Address and Logical Address
- Memory Translation times

#### Accepted Answers:

*Map of Physical Address and Logical Address*

2) CR3 contains 1 point

- Starting Address of BTB
- Data Segment Address
- Starting Address of Page directory
- None of these

#### Accepted Answers:

*Starting Address of Page directory*

3) A user process cannot change the CR3 register because 1 point

- It is not a PL0 instruction
- It is not a PL1 instruction
- It is not a PL2 instruction
- It is not a PL3 instruction

#### Accepted Answers:

*It is not a PL0 instruction*

4) Increasing the number of page frames decreases the number of page faults 1 point

- True
- False

**Accepted Answers:***False*

5) Page frames are loaded into pages in physical memory

**1 point**

- True
- False

**Accepted Answers:***False*

6) Per-process paging is achieved using

**1 point**

- different page numbers to each page
- different CR3 registers for each process
- different page handler for each process
- All of the above

**Accepted Answers:***different CR3 registers for each process*

7) Page Replacement Algorithms are needed because

**1 point**

- There are limited number of pages in an operating system
- Pages are to be given to other running processes
- There are limited number of page frames allocated to each process
- All of the above

**Accepted Answers:***There are limited number of page frames allocated to each process*

8) A given page replacement algorithm has to be devoid of Belady's anomaly because otherwise

**1 point**

- An increase in program size will cause page faults
- An increase in variable size of the program will cause page faults.
- An increase in number of frames wont decrease number of page faults.
- None of the above

**Accepted Answers:***An increase in number of frames wont decrease number of page faults.*

9) A page replacement algorithm will be devoid of Belady's anomaly if it follows

**1 point**

- Operating system instructions
- Stack Property
- page frame allocation ordering
- None of the above

**Accepted Answers:***Stack Property*

10) A system call for a PL3 process(A) to PL1 process will be held in

**1 point**

- PL3 stack of A
- PL2 stack of OS
- PL1 stack of A
- A new PL1 stack for the new process

**Accepted Answers:**

*PL1 stack of A*

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