20 Lecture - CS501

Important Mcqs

1. What is a hazard in pipelining?

- a) A condition where the pipeline execution is stalled
- b) A condition where the pipeline execution continues uninterrupted
- c) A condition where the pipeline execution reverses
- d) A condition where the pipeline execution stops completely

Answer: a) A condition where the pipeline execution is stalled

What is a data hazard?

- a) A hazard caused by the use of a shared resource
- b) A hazard caused by an instruction that changes the program counter
- c) A hazard caused by a dependency between two or more instructions
- d) A hazard caused by a structural limitation in the pipeline design

Answer: c) A hazard caused by a dependency between two or more instructions

What is a structural hazard?

- a) A hazard caused by an instruction that changes the program counter
- b) A hazard caused by a dependency between two or more instructions
- c) A hazard caused by a structural limitation in the pipeline design
- d) A hazard caused by the use of a shared resource

Answer: c) A hazard caused by a structural limitation in the pipeline design

What is a control hazard?

- a) A hazard caused by a dependency between two or more instructions
- b) A hazard caused by an instruction that changes the program counter
- c) A hazard caused by a structural limitation in the pipeline design
- d) A hazard caused by the use of a shared resource

Answer: b) A hazard caused by an instruction that changes the program counter

What is pipeline latency?

- a) The number of pipeline stages in the pipeline
- b) The time required to complete one pipeline stage
- c) The total time required to complete a sequence of pipeline stages
- d) The time required to switch between pipeline stages

Answer: c) The total time required to complete a sequence of pipeline stages

What is pipeline throughput?

- a) The time required to complete one pipeline stage
- b) The total time required to complete a sequence of pipeline stages
- c) The number of pipeline stages in the pipeline
- d) The rate at which instructions are completed by the pipeline

Answer: d) The rate at which instructions are completed by the pipeline

How can data hazards be resolved in pipelining?

a) By inserting NOP instructions

- b) By reordering instructions
- c) By forwarding data between pipeline stages
- d) By stalling the pipeline

Answer: c) By forwarding data between pipeline stages

How can structural hazards be resolved in pipelining?

- a) By inserting NOP instructions
- b) By reordering instructions
- c) By forwarding data between pipeline stages
- d) By adding additional resources

Answer: d) By adding additional resources

How can control hazards be resolved in pipelining?

- a) By inserting NOP instructions
- b) By reordering instructions
- c) By forwarding data between pipeline stages
- d) By using branch prediction

Answer: d) By using branch prediction

Which type of hazard can be resolved by instruction reordering?

- a) Data hazards
- b) Structural hazards
- c) Control hazards
- d) All of the above

Answer: d) All of the above