



**NR23: Principles of programming languages: 23CC508(Professional Elective- II)**

**Unit IV: Concurrency, Exception Handling**

**Multiple Choice Questions (MCQs)**

1. Concurrency allows a program to:
  - A) Execute only one task at a time
  - B) Execute multiple tasks simultaneously or in overlapping time periods
  - C) Reduce the size of source code
  - D) Eliminate the need for memory management

Answer: B) Execute multiple tasks  
simultaneously or in overlapping time periods

2. Which synchronization mechanism was introduced by Edsger W. Dijkstra?
  - A) Monitor
  - B) Semaphore
  - C) Mutex
  - D) Event Handler

Answer: B) Semaphore

3. A semaphore is primarily used for:
  - A) Data encryption
  - B) Memory allocation
  - C) Process synchronization

- D) Program compilation

Answer: C) Process synchronization

4. Which construct provides mutual exclusion and condition synchronization in concurrent programming?

- A) Array
- B) Monitor
- C) Stack
- D) Queue

Answer: B) Monitor

5. In message passing, processes communicate by:

- A) Sharing variables directly
- B) Using pointers
- C) Exchanging messages
- D) Accessing the same memory location

Answer: C) Exchanging messages

6. Which keyword is used to create a thread in Java?

- A) process
- B) execute
- C) Thread
- D) run()

Answer: C) Thread

7. Exception handling is used to:

- A) Improve program speed

- B) Handle abnormal situations during execution
- C) Manage memory automatically
- D) Create threads

Answer: B) Handle abnormal situations during execution

8. Which block is used to handle exceptions in Java?

- A) do-catch
- B) try-catch
- C) if-else
- D) switch-case

Answer: B) try-catch

9. Event handling is commonly used in:

- A) Database normalization
- B) User interface programming
- C) Compiler optimization
- D) Memory allocation

Answer: B) User interface programming

10. Which language supports event handling through delegates and events?

- A) Pascal
- B) FORTRAN
- C) C#
- D) COBOL

Answer: C) C#

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### Fill in the Blanks

1. The execution of multiple tasks during overlapping time periods is called \_\_\_\_\_.

Answer: concurrency

2. A \_\_\_\_\_ is an integer variable used to control access to shared resources.

Answer: semaphore

3. \_\_\_\_\_ provide a high-level synchronization mechanism for concurrent processes.

Answer: Monitors

4. In message passing systems, processes communicate by exchanging \_\_\_\_\_.

Answer: messages

5. In Java, lightweight units of execution are called \_\_\_\_\_.

Answer: threads

6. The mechanism used to handle runtime errors is called \_\_\_\_\_ handling.

Answer: exception

7. The block of code that contains statements that may generate exceptions is the \_\_\_\_\_ block.

Answer: try

8. The code executed when an exception

occurs is written inside the \_\_\_\_\_  
block.

Answer: catch

9. User actions such as mouse clicks and  
key presses are known as \_\_\_\_\_.

Answer: events

10. Event handling in graphical applications  
is based on the \_\_\_\_\_-driven  
programming model.

Answer: event