NITTE (Deemed to be University) | NMAM INSTITUTE OF TECHNOLOGY

(An off-Campus Institution of NITTE (DEEMED TO BE UNIVERSITY), MANGALORE)

Find the following system call words hidden in the grid (horizontal, vertical, diagonal).

```
R E A D W R I T E
O F O R K X Z T I
P I P E L E E E C
E C L O S E Q A L
N E X E C W V I O
I O C T L B A T T
```

Match the Call

Draw a line between the system call and its description.

1. `read` — A. Create a new process
2. `fork` — B. Terminate a process
3. `exit` — C. Get data from a file
4. `wait` — D. Suspend until child completes
5. `write` — E. Send data to a file

Word Search

```
P R O C E S S T H
W A I T I N G Q R
S C H E D U L I N
C O N T E X T A O
R E A D Y M B E M
Z O M B I E U S Q
D E A D L O C K T
```

Match the Concept

Draw a line between the concept and its description.

1. `ready` — A. Process waiting for CPU time
2. `waiting` — B. Process waiting for an event or resource
3. `zombie` — C. Finished process, not fully removed
4. `deadlock` — D. Processes stuck forever due to resource cycle
5. `scheduling` — E. Deciding the next process to run

`Fill in the Blank`

Complete each sentence with the correct process management term.

1. A _____is the smallest unit of CPU execution inside a process.
2. When a process is done but not cleared, it becomes a _____.
3. The _____queue holds processes ready to execute.
4. A _____occurs when no process can proceed due to resource cycle.
5. _____is the technique to determine which process runs next.

Puzzle 1: Word Search

M U T E X S Y N C
S E M A P H O R E
C R I T I C A L A
S E C T I O N B L
R A C E C O N D I
V A R I A B L E O
L O C K A T O M I

Match the Concept

Draw a line between the concept and its description.

1. `mutex` — A. Lock allowing single thread access
2. `semaphore` — B. Counter-based signaling tool
3. `critical section` — C. Code that needs exclusive access
4. `race condition` — D. Error due to uncontrolled access
5. `atomic` — E. Operation that cannot be interrupted

Fill in the Blank

Complete each sentence with the correct synchronization term.

1. A _____ensures only one process enters the critical section at a time.
2. The _____problem happens when two threads change shared data at the same time.
3. A _____variable is often used for signaling between threads.
4. A _____is a code region that must be executed by only one process at once.
5. An _____operation runs completely or not at all, without interference.

System Calls – Word Puzzle Pack

Name: _____Date: _____

Puzzle 1: Word Search

Find the following system call words hidden in the grid (horizontal, vertical, diagonal).

Words to Find: `fork`, `exec`, `wait`, `exit`, `read`, `write`, `open`, `close`, `ioctl`, `pipe`

R E A D W R I T E
O F O R K X Z T I
P I P E L E E E C
E C L O S E Q A L
N E X E C W V I O
I O C T L B A T T

Puzzle 2: Crossword

Fill in the blanks with the correct system call.

Across

1. Creates a new process (_____).
2. Ends a process (_____).
3. Opens a file for reading or writing (_____).

Down 2. Replaces the current process image with a new one (**). 4. Waits for a child process to finish (**).

Puzzle 3: Match the Call

Draw a line between the system call and its description.

1. `read` — A. Create a new process
2. `fork` — B. Terminate a process
3. `exit` — C. Get data from a file
4. `wait` — D. Suspend until child completes
5. `write` — E. Send data to a file

Puzzle 4: Fill in the Blank

Complete each sentence with the correct system call.

1. The _____system call is used to create a new process.
2. To terminate the current process, we use _____.
3. The _____system call is used to replace the process image with another program.
4. The _____system call writes data into a file.
5. The _____system call allows a process to wait until its child finishes.

Answer Key (for teacher use)

Word Search: fork, exec, wait, exit, read, write, open, close, ioctl, pipe
Crossword: 1 Across: fork, 3 Across: exit, 5 Across: open, 2 Down: exec, 4 Down: wait
Match the Call: 1–C, 2–A, 3–B, 4–D, 5–E
Fill in the Blank: 1. fork, 2. exit, 3. exec, 4. write, 5. wait

`Puzzle 1: Word Search`

Find the following process management terms hidden in the grid (horizontal, vertical, diagonal).

Words to Find: `process`, `thread`, `scheduling`, `context`, `state`, `ready`, `waiting`, `zombie`, `deadlock`, `queue`

P R O C E S S T H
W A I T I N G Q R
S C H E D U L I N
C O N T E X T A O
R E A D Y M B E M
Z O M B I E U S Q
D E A D L O C K T

Puzzle 2: Crossword

Fill in the blanks with the correct process management concept.

Across

1. A lightweight unit of execution within a process (_____).
2. A process that has finished execution but still has an entry in the process table (_____).
3. The act of deciding which process runs next (_____).

Down 2. The saved information needed to resume a process (**). 4. A condition where processes wait forever due to circular dependency (**).

Puzzle 3: Match the Concept

Draw a line between the concept and its description.

1. `ready` — A. Process waiting for CPU time
2. `waiting` — B. Process waiting for an event or resource
3. `zombie` — C. Finished process, not fully removed
4. `deadlock` — D. Processes stuck forever due to resource cycle
5. `scheduling` — E. Deciding the next process to run

Puzzle 4: Fill in the Blank

Complete each sentence with the correct process management term.

1. A _____is the smallest unit of CPU execution inside a process.
2. When a process is done but not cleared, it becomes a _____.
3. The _____queue holds processes ready to execute.
4. A _____occurs when no process can proceed due to resource cycle.
5. _____is the technique to determine which process runs next.

Answer Key (for teacher use)

Word Search: process, thread, scheduling, context, state, ready, waiting, zombie, deadlock, queue
Crossword: 1 Across: thread, 3 Across: zombie, 5 Across: scheduling, 2 Down: context, 4 Down: deadlock
Match the Concept: 1–A, 2–B, 3–C, 4–D, 5–E
Fill in the Blank: 1. thread, 2. zombie, 3. ready, 4. deadlock, 5. scheduling

Synchronization & Critical Section – Word Puzzle Pack

Name: _____Date: _____

Puzzle 1: Word Search

Find the following synchronization terms hidden in the grid (horizontal, vertical, diagonal).

Words to Find: `mutex`, `semaphore`, `critical`, `section`, `synchronization`, `race`, `condition`, `variable`, `lock`, `atomic`

M U T E X S Y N C
S E M A P H O R E
C R I T I C A L A
S E C T I O N B L
R A C E C O N D I
V A R I A B L E O
L O C K A T O M I

Puzzle 2: Crossword

Fill in the blanks with the correct concept.

Across

1. A mechanism that allows only one thread at a time in a section of code (_____).
2. A variable used to control access to resources, often signaling conditions (_____).
3. A programming operation that executes fully or not at all (_____).

Down 2. The problem when multiple threads access shared data without proper control **(). 4. A signaling mechanism that can count and control access to multiple resources ()**.

Puzzle 3: Match the Concept

Draw a line between the concept and its description.

1. `mutex` — A. Lock allowing single thread access
2. `semaphore` — B. Counter-based signaling tool
3. `critical section` — C. Code that needs exclusive access
4. `race condition` — D. Error due to uncontrolled access
5. `atomic` — E. Operation that cannot be interrupted

Puzzle 4: Fill in the Blank

Complete each sentence with the correct synchronization term.

1. A _____ensures only one process enters the critical section at a time.
2. The _____problem happens when two threads change shared data at the same time.
3. A _____variable is often used for signaling between threads.
4. A _____is a code region that must be executed by only one process at once.
5. An _____operation runs completely or not at all, without interference.

Answer Key (for teacher use)

Word Search: mutex, semaphore, critical, section, synchronization, race, condition, variable, lock, atomic
Crossword: 1 Across: mutex, 3 Across: condition, 5 Across: atomic, 2 Down: race, 4 Down: semaphore
Match the Concept: 1–A, 2–B, 3–C, 4–D, 5–E
Fill in the Blank: 1. mutex, 2. race condition, 3. condition, 4. critical section, 5. atomic