

# TKT20016 Review questions 6

## I Deadlock. Explain four conditions of deadlock.

- \* **Mutual exclusion** → Only one process may use resource at time.
- \* **Hold and wait** → Process may hold allocated resources while waiting assignment of other resources.
- \* **No pre-emption** → Resource can't be removed from process holding it "by force".
- \* **Circular wait** → Closed chain of processes exists such each process hold resource needed by others in the chain.

## II HDD and SSD

① Flash chip three main operations:

- ↳ **Read**: Fast, non destructive
- ↳ **Erase**: Slow, block based, degrades cells, erase entire block.
- ↳ **Program**: Faster than erase, slower than read, limited write cycles.

② HDD have similar read/write functions, but:

- \* Flash has no moving parts + faster, lower latency, better random access.
- \* HDDs are mechanical → slower seek times, rotational latency.
- \* Erase in flash is special operation, adding to write cost.

## ↳ Performance :

- \* SSDs : Faster access times, higher throughput, excellent random I/O-performance.
- \* HDDs : Slower due to mechanical movement; better for sequential I/O.

## ↳ Cost :

- \* SSDs : More expensive per GB
- \* HDDs : Cheaper per GB, making it preferable for large-capacity storage.