True/False

RAID 10 can achieve better sequential read performance than RAID 0

False

In a reliability block diagram, adding components in series decrease the system reliability with respect to the reliability of the single component

True

The structure (or topology) of a reliability block diagram is always the same as the structure (or topology) of the modeled system

False

All faults occurring in a system cause a failure of the system

False

A system having very small reliability may have large availability

True

After a fault activation the system is always expected to fail

False

The reliability of a Triple Modular Redundancy (TMR) system is always greater than the reliability of the single copy of the system

False

RAID 0 provides the best read and write performance of any RAID level composed of the same amount of disks

True

RAID 6 offers better random and sequential write performance than RAID 5

False

RAID 0 can tolerate the failure of one disk

False

Datacenter tiers are a standardized classification system used to categorize the reliability and availability of a data center

True

RAID 0 provides basic data redundancy and fault tolerance

False

RAID 5 can handle sequential reads and writes better than RAID 10 with the same amount of disks

True

Multiple choice

To increase reliability, which of the following actions is not correct?

A Have spare components at disposal

B Reduce MTTR to a minimum

C Use elements with low MTTF

D Use multiple redundant components

The following sentence: "The probability that the component does not fail in the interval 0 ... t, knowing that at the instant t = 0 the component was working correctly" defines:

A Dependability

B Reliability

C Availability

D None of the other

Consider an array of N disks. Select the right order of the RAID levels in terms of MTTFRAID in descending order, i.e. for the higher to the lower MTTF. Consider a number of disks N that is large enough to satisfy the minimum requirements for all the RAID levels.

A None of the others

B RAID 5, RAID 1+0, RAID 0+1

C RAID 1+0, RAID 0+1, RAID 5

D RAID 0+1, RAID 5, RAID 1+0

Downtime is a period of time, or a percentage of a time span, when a system is unavailable or offline.

A regardless of the cause

B because of system crashes

C none of the other

D because of routine maintenance

When dependability-related requirements must be considered? Select the right answer.

A Only during requirements definition

B When starting testing/verification activities

C When a prototype of the system is available

D In every phase of the design flow

Consider an array of N disks. Select the right order of the RAID levels in terms of effective data storage in descending order, i.e. for the higher to the lower data storage availability.

A RAID 0, RAID 4, RAID 6

B RAID 6, RAID 0, RAID 4

C None of the others

D RAID 4, RAID 6, RAID 0

Consider an array of N disks. Select the right order of the RAID levels in terms of effective data storage in ascending order, i.e. for the lower to the higher data storage availability.

A RAID 1+0, RAID 6, RAID 5

B RAID 6, RAID 5, RAID 1+0

C None of the others

D RAID 1+0, RAID 5, RAID 6

Which definition is not encompassed by Dependability

A Reversibility: ability to reverse a broken service

B Reliability: continuity of correct service

C Maintainability: reparation to restore correct service

D Availability: readiness for correct service