

1. A unit of program execution that accesses and possibly updates various data items is called (a) Concurrency (b) CheckPointing (c) Crash Recovery (d) Transaction
2. In a schedule transactions commit only after all transactions whose changes they read commit (a) Unrecoverable (b) Forward (c) Execution Time (d) Recoverable
3. All locks held by a transaction are released when the transaction is (a) Terminated (b) Stopped (c) Blocked (d) Completed
4. SQL stands for (a) Sequential Query Language (b) Structured Query Language (c) Sub Query Language (d) Serial Query Language
5. Which algorithm is designed to work with a steal/no-force approach (a) Linear search algorithm (b) Binary search algorithm (c) Fuzzy checkpoint (d) Aries
6. A schedule 'S' is conflict serializable then precedence graph is (a) Squared (b) Acyclic (c) Cyclic (d) Rectangle
7. Two transactions that hold a shared lock on an object both request and upgrade to an exclusive lock. This leads to (a) Exclusive lock (b) Deadlock (c) Exceptional lock (d) Shared lock
8. According to Thomas write rule (a) $TS(T) < WTS(0)$ (b) $TS(T) \neq WTS(0)$ (c) $TS(T) > WTS(0)$ (d) $TS(T) = WTS(0)$
9. The most recent portion of the log is called (a) Log recent (b) Logout (c) Loghead (d) Logtail
10. Which of the following fields that an update log record contains that can be used to redo the changes and undo it (a) length, offset (b) length, before image (c) length, after image (d) before image, after image
11. A log record is scanned in _____ direction (a) Forward and Backward (b) Forward (c) Middle (d) Backward
12. A data structure that organizes data records on disk to optimize certain kinds of retrieval operations is called (a) Array (b) Graph (c) Tree (d) Index
13. Alternative (1) for what to store as a data entry in an index is (a) A data entry is a $\langle k, \text{rid-list} \rangle$ pair, where rid-list is a list of record IDs of data records with search key value k. (b) A data entry is a $\langle k, \text{rid} \rangle$ pair, where rid is the record ID of a data record with search key value k. (c) A data entry k^* is an actual data record (with search key value k) (d) A search key value.
14. If every non-leaf node of a tree-based data structure has n children, then the number of leaf pages of a tree of height h are. (a) nh (b) $n(h-2)$ (c) nh (d) $1/nh$
15. Which file organization allows to store records that would satisfy the join condition by using one block read (a) Multitable clustering file organization (b) Heap file organization (c) Hash file organization (d) Sequential file organization
16. Which key index can support a broad range of queries because it matches more selection conditions (a) foreign key index (b) null index (c) secondary key index (d) composite key index
17. In magnetic disks, a track is divided into _____ whose size is a characteristic of the disk and cannot be changed. (a) Track (b) Cylinder (c) Sector (d) Disk blocks
18. The buffer manager manages the available main memory by partitioning it into a collection of pages which we collectively refer to as (a) Frames (b) Disk blocks (c) Sectors (d) Buffer pool

19. If each node in B + tree contains between 2 and 4 entries, then the order of B + tree is (a) $d=2$ (b) $d=1$ (c) $d=4$ (d) $d=3$

20. Which of the following is used to map values in a search field into a range of bucket numbers to find the page on which a desired data entry belongs (a) RecordId (b) Hash function (c) Sector (d) Index

ANS: D D D B D B B A D D B D C A A D C D A B

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