

### DBMS 2ND MID Online Bits

1. A unit of program execution that accesses and possibly updates various data items is called  
(a) Transaction (b) Concurrency (c) Crash Recovery (d) Check Pointing
2. If T1 tries to read the values of A again, it will get different result even though it has not modified A in the meantime. This situation could not arise in serial execution of two transactions; it is called an  
(a) Unrepeatable write (b) Repeatable read (c) Unrepeatable read (d) Repeatable write
3. All locks held by a transaction are released when the transaction is  
(a) Terminated (b) Completed (c) Blocked (d) Stopped
4. If the access is ready only then the following commands are not to be executed  
(a) Update (b) Insert, Delete and Update (c) insert (d) Delete
5. After crash, which of the following is given control and must bring the database to a consistent state  
(a) Concurrency control (b) Query and evaluation plans (c) Transaction control (d) Recovery manager
6. A schedule is conflict serializable if it is to some serial schedule  
(a) Conflict equivalent (b) View equivalent (c) View serializable (d) Conflict serializable
7. If we need to update the objects we must first upgrade to an  
(a) Exclusive lock (b) Exceptional lock (c) Shared lock (d) Request lock
8. In B++ tree search begins at the  
(a) Root (b) Leaf (c) Middle (d) Sib-ling
9. ARIES stands for  
(a) Algorithm for renewal isolation exploiting Symantic  
(b) Algorithm for remove isolation exploiting Symantic  
(c) Algorithm for redundant isolation exploiting Symantic  
(d) Algorithm for recovery isolation exploiting Symantic
10. In addition to the log, which of the following tables contain important recovery related information  
(a) Transaction table & Data table  
(b) Dirty page table & Index table  
(c) Transaction table & Dirty page table  
(d) Transaction table & Index table
11. is the first step in analysis phase of ARIES  
(a) Unfinished transactions  
(b) Examining recent checkpoint record  
(c) finished transactions  
(d) Initializing dirty page table
12. The unit of information read from or written to disk is called  
(a) File (b) Page (c) Sector (d) Record
13. The syntax of dropping an index in SQL is  
(a) DROP <index-name>;  
(b) DROP INDEX <index-name>  
(c) DROP UNIQUE INDEX <index-name>;  
(d) DROP INDEX <index-name>;
14. Which index data structure is used to organized data entries in sorted order by search key value

(a) Unclustered Index (b) Hash based indexing (c) Tree based indexing (d) Clustered index

15. The cost (in terms of execution time) of scan operation in sorted file is Where  $B =$  The number of data pages when records are packed on to pages with no waste space  $R =$  The number of records per page  $D =$  The average time to read or write disk space  $C =$  The average time to process record

(a)  $1.5B(D + RC)$  (b)  $(D \log_2 B + C \log_2 R)$  (c) Search cost +  $B(D + RC)$  (d)  $B(D + RC)$

16. An index that contains only indexable attributes in the query is called

(a) unclustered index (b) clustered index (c) admissible index (d) unique index

17. In magnetic disks, a track is divided into whose size is a characteristic of the disk and cannot be change.

(a) Sector (b) Disk blocks (c) Cylinder (d) Track

18. Which variable indicates whether the page has been modified since it was brought into the buffer pool from disk

(a) Buffer pool (b) Dirty (c) Pin count (d) Frame

19. The height of the B+ tree with only leaf level and a single index level is

(a) 1 (b) 4 (c) 2 (d) 3

20. Which function is an important component of the hashing approach (a) Mapping function (b) Hash function (c) Character function (d) Aggregate function

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

21. Which component of the database is responsible for handling concurrency control schemes (a) Transaction management (b) Serializability (c) Concurrency Control Management (d) Recovery Manager

22. The following schedules come under which type T1 T2 R(A) W(A) R(A) W(A) R(B) W(B) R(B) W(B) Commit Commit (a) Recoverable schedule (b) Unrecoverable schedule (c) Recoverable transaction (d) Serializable schedule

23. If transaction T1 sets an exclusive lock on object A, T2 sets an exclusive lock on B. Now T1 requests for exclusive lock on B and T2 requests exclusive lock on A then this situation can result in (a) Sharing (b) Transaction Management (c) Deadlock (d) Hiding

24. Writing a page to disk is an action in atomic writes (a) Read (b) Atomic (c) Redundancy (d) Duplicate

25. Who can take several steps to tune recovery subsystems (a) System Analyst (b) Client (c) DBA (d) Application programmer

26. As schedule 'S' is conflict serializable then precedence graph is (a) Cyclic (b) Rectangle (c) Squared (d) Acyclic

27. If we need to update the objects we must first upgrade to an (a) Shared lock (b) Exceptional lock (c) Request lock (d) Exclusive lock

28. SIX lock stands for (a) Shared Intensive Exclusive (b) Sublock (c) Shared Exclusive lock (d) Writelock

29. The phases in ARIES are (a) Analysis, undo exits (b) Analysis, undo, redo (c) Analysis, undo (d) Analysis, redo exits

30. LSN of the first log record that caused the page to become dirty will be maintained under the field in dirty page table (a) recLSN (b) undo next LSN (c) last LSN (d) prev LSN

31. is used to denote unsaved transactions (a) Crash table (b) Recovery table (c) Dirty table (d) Data table
32. Which is the most important external storage device (a) Disk (b) Flash Memory (c) Cache (d) Main Memory
33. An index that uses alternatives of data entry i.e;  $\langle k, rid \rangle$ ,  $\langle k, rid \rangle$  list pair where  $ri$  is record id of a data record with search key value  $K$  and  $rid$  list is a list of record ids of are sorted on key field  $K$  is indexing (a) Clustered (b) Dense (c) Sparse (d) Unclustered
34. Which index data structure is used to organized data entries in sorted order by search key value (a) Tree based indexing (b) Clustered index (c) Hash based indexing (d) Unclustered Index
35. The cost (in terms of execution time) of search with equality selection in heap file is Where  $B$  = The number of data pages when records are packed on top pages with no waste space  $R$  = The number of records per page  $D$  = The average time to read or write a disk page  $C$  = The average time to process a record (a)  $C + D$  (b)  $0.5B(D + RC)$  (c)  $2D + C$  (d)  $B(D + RC)$
36. An index that contains only indexable attributes in the query is called (a) admissible index (b) unclustered index (c) unique index (d) clustered index
37. Which level improves overall system performance at the lowest cost, but with reliability problem (a) Raid level 1 (b) Raid level 3 (c) Raid level 2 (d) Raid level 0
38. A database grows and shrinks as records are (a) Deleted (b) Inserted & deleted over time (c) Inserted (d) Inserted & updated over time
39. The measure of the capacity of a tree node in B+ tree is (a) Order of the tree (b) Out degree of a node (c) Height of the tree (d) In degree of a node
40. Which function is an important component of the hashing approach (a) Character function (b) Hash function (c) Mapping function (d) Aggregate function

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

41. A transaction that may not always complete its execution successfully is called (a) Aborted (b) Fail (c) Terminated (d) Committed
42. In serial execution a short transaction could get stuck behind a long transaction leading to, unpredictable delays in (a) Delay time (b) System Throughput (c) Process execution time (d) Responsetime
43. By using protocol serial interleaving is not allowed (a) Peer to Peer (b) HTTP (c) UDP (d) Strict 2PL
44. A transaction retrieves a collection of objects twice and sees different results even though it does not modify any of the setuples itself called (a) Hiding problem (b) Phantom problem (c) Chaining problem (d) Locking problem
45. Who can take several steps to tune recovery subsystems (a) DBA (b) Application programmer (c) System Analyst (d) Client
46. If a transaction holding heavily used locks is being suspended by an OS then every other transactions needs the lock is queued, such queues are called as (a) Deadlocks (b) Atomicity (c) Convoys (d) Latches
47. A variant of 2PL called which can also prevent deadlock (a) Conservative 2PL (b) Strict lock (c) Strict 2PL (d) Un-conservative 2PL
48. The following schedule comes under which type T1 T2 R(A) Commit W(A) Comm

it (a) View equivalent (b) Conflict equivalent (c) View Serializable (d) Conflict Serializable

49. Any changes to a database object is first recorded in the log; the record in the log must be written to stable storage before the change to the database object is written to disk is called (a) Logging (b) Locking (c) Read ahead logging (d) Write ahead logging

50. Which log record contains just the before image file (a) all log records (b) redo only update log record (c) update log record (d) undo only update log record

51. The most recent checkpoint was taken at the end of the execution with an empty transaction table and dirty page table (a) Centre (b) Beginning (c) End (d) Middle

52. Which is the most important external storage device (a) Main Memory (b) Disk (c) Flash Memory (d) Cache

53. An index on a set of fields that includes the primary key is called (a) Secondary index (b) Primary index (c) Unclustered index (d) Clustered index

54. Which function is applied to determine the Bucket to which a record belongs (a) Mapping function (b) Group function (c) Hash function (d) Record id

55. The cost (in terms of execution time) of search with range selection in heap file is  $W$  where  $B$  = The number of data pages when records are packed on to pages with no wasted space  $R$  = The number of records per page  $D$  = The average time to read or write a disk page  $C$  = The average time to process a record (a)  $C + D$  (b)  $0.5B(D + RC)$  (c)  $B(D + RC)$  (d)  $2D + C$

56. If the search key is composite, the query in which each field in the search key is bound to a constant is called (a) logical query (b) inequality query (c) equality query (d) range query

57. If Data is stored on magnetic disk in units called (a) tracks (b) cylinder (c) platters (d) disk blocks

58. Which layer in DBMS architecture hides the details of the underlying hardware (and possibly the OS) and allows higher levels of software to think of the data as a collection of pages (a) Concurrency control (b) Disk space manager (c) Buffer manager (d) Recovery manager

59. In B+ Tree, the number of pointers to children with  $m$  index entries of non leaf node are (a)  $m - 1$  (b)  $2m$  (c)  $m + 1$  (d)  $m$

60. Which index technique cannot support range searches (a) Unclustered indexing (b) Tree based indexing (c) Clustered indexing (d) Hash based indexing

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

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76. If the search key is composite, the query in which each field in the search key is bound to a constant is called (a) logical query (b) inequality query (c) equality query (d) range query
77. If Data is stored on magnetic disk in units called (a) tracks (b) cylinder (c) platters (d) disk blocks
78. Which layer in DBMS architecture hides the details of the underlying hardware (and possibly the OS) and allow higher levels of software to think of the data as a collection of pages (a) Concurrency control (b) Disk space manager (c) Buffer manager (d) Recovery manager
79. In B+ Tree, the number of pointers to children with m index entries of non leaf node are (a)  $m - 1$  (b)  $2m$  (c)  $m + 1$  (d)  $m$
80. Which index technique cannot support range searches (a) Unclustered indexing (b) Tree based indexing (c) Clustered indexing (d) Hash based indexing

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

81. Which operation transfers the data item from the local buffer of the transaction that executed the write back to the database (a) Read (b) Write (c) Consistency (d) Durability



82. Reading uncommitted data comes under (a) rr conflict (b) wr conflict (c) ww conflict (d) rw conflict
83. The locking protocol allow only interleaving of transaction (a) Memory (b) Safe (c) Unsafe (d) Register
84. Writing a page to disk is an action in atomic writes (a) Read (b) Redundancy (c) Atomic (d) Duplicate
85. After crash, which of the following is given control and must bring the database to a consistency state (a) Transaction control (b) Query and evaluation plans (c) Recovery manager (d) Concurrency control
86. Strict schedule is (a) Unschedule (b) Non Recoverable (c) Recoverable and Non Recoverable (d) Recoverable
87. Concurrency can be increased by introducing new kind of lock is called (a) Exclusive lock (b) Update lock (c) Shared lock (d) Write lock
88. According to Thomas write rule (a)  $TS(T) = WTS(0)$  (b)  $TS(T) < WTS(0)$  (c)  $TS(T) > WTS(0)$  (d)  $TS(T) \neq WTS(0)$
89. ARIES stands for (a) Algorithm for remove isolation exploiting Symantic (b) Algorithm for renewal isolation exploiting Symantic (c) Algorithm for redundant isolation exploiting Symantic (d) Algorithm for recovery isolation exploiting Symantic
90. The fields common to all log records are (a) prevLSN, pageID, length (b) transID, type, pageID (c) prevLSN, transID, type (d) pageID, length, offset
91. is the first step in analysis phase of ARIES (a) Unfinished transactions (b) Examining recent checkpoint record (c) Initializing dirty page table (d) finished transactions
92. Each record in a file is identified by (a) Page id (b) Bucket (c) Record id (d) Hash Function
93. The syntax of dropping an index in SQL is (a) DROP <index-name>; (b) DROP UNIQUE INDEX <index-name>; (c) DROP INDEX <index-name> (d) DROP INDEX <index-name>;
94. In B+ trees, all leaf pages are maintained in (a) Doubly Linked list (b) Linked list (c) Stack (d) Arrays
95. Which file organization allows to store records that would satisfy the join condition by using one block read (a) Hash file organization (b) Heap file organization (c) Sequential file organization (d) Multitable clustering file organization
96. The presence of suitable indexes can significantly improve (a) tuning the conceptual scheme (b) The index selection (c) configuration enumeration (d) evaluation plan for a query
97. In data striping, the data is segmented into equal size partitions distributed over multiple disks. The size of the partition is called (a) Striping unit (b) Block (c) Cylinder (d) Sector
98. Which layer in DBMS architecture hides the details of the underlying hardware (and possibly the OS) and allow higher level software to think of the data as a collection of pages (a) Concurrency control (b) Buffer manager (c) Recovery manager (d) Disk space manager
99. The height of the B+ tree with only leaf level and a single index level is (a) 3 (b) 1 (c) 2 (d) 4

100. Which scheme uses a clever policy for creating new buckets and supports Inserts & Delete efficiently without the use of a directory (a) Static Hashing (b) Extendable Hashing (c) Linear Hashing (d) Indexing

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

101. A unit of program execution that accesses and possibly updates various data items is called (a) Concurrency (b) Check Pointing (c) Crash Recovery (d) Transaction

102. In a schedule transactions commit only after all transactions whose changes they read commit (a) Unrecoverable (b) Forward (c) Execution Time (d) Recoverable

103. All locks held by a transaction are released when the transaction is (a) Terminated (b) Stopped (c) Blocked (d) Completed

104. SQL stands for (a) Sequential Query Language (b) Structured Query Language (c) Sub Query Language (d) Serial Query Language

105. 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

106. A schedule 'S' is conflict serializable then precedence graph is (a) Squared (b) Acyclic (c) Cyclic (d) Rectangle

107. 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

108. According to Thomas write rule (a)  $TS(T) < WTS(0)$  (b)  $TS(T) \neq WTS(0)$  (c)  $TS(T) > WTS(0)$  (d)  $TS(T) = WTS(0)$

109. The most recent portion of the log is called (a) Log recent (b) Log out (c) Log head (d) Log tail

110. 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

111. A log record is scanned in — — — — — direction (a) Forward and Backward (b) Forward (c) Middle (d) Backward

112. 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

113. Alternative (1) for what to store as of a data entry in an index is (a) A data entry is a  $\langle k, rid-list \rangle$  pair, where rid-list is a list of record ids of data records with search key value k. (b) A data entry is a  $\langle k, rid \rangle$  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.

114. 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)  $1/nh$

115. 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

116. Which key index can support a broader range of queries because it matches more selection conditions (a) foreign key index (b) null index (c) secondary key index (d) co

composite key index

117. In magnetic disks, a track is divided into whose size is a characteristic of the disk and cannot be change. (a) Track (b) Cylinder (c) Sector (d) Disk blocks

118. 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

119. 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)  $d = 3$

120. 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) Record Id (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**

121. A unit of program execution that accesses and possibly updates various data items is called (a) Check Pointing (b) Crash Recovery (c) Concurrency (d) Transaction

122. A Transaction T2 try to read uncommitted data which was modified by T1 transaction may yield (a) wr conflict (b) rr conflict (c) ww conflict (d) www conflict

123. is the simple way to identify the deadlock (a) Searching (b) Time in Mechanism (c) Locking (d) Timeout Mechanism

124. The syntax of Rollback command is (a) ROLLBACK [SAVEPOINT <savepoint name>] (b) ROLLBACK [TO SAVEPOINT <savepoint name>] (c) ROLLBACK [TO SAVEPOINT] (d) ROLLBACK [TO <savepoint name>]

125. WAL stands for (a) Write Ahead Log (b) Write Ahead Loss (c) Write Among Loss (d) With Ahead Log

126. A schedule is if it is view equivalent to some serial schedule (a) Conflict equivalent (b) View equivalent (c) Conflict serializable (d) View serializable

127. The wait-dies scheme is (a) Non-Preemptive (b) Exclusive (c) Shared (d) Preemptive

128. According to Thomas write rule (a)  $TS(T) < WTS(0)$  (b)  $TS(T) \neq WTS(0)$  (c)  $TS(T) = WTS(0)$  (d)  $TS(T) > WTS(0)$

129. The recovery manager of DBMS responsible for following two important properties (a) Consistency & Granularity (b) Atomicity & Durability (c) Granularity & consistency (d) Consistency & Durability

130. Which log record contains just the after image field (a) all log records (b) redo only update log record (c) update log record (d) undo only update log record

131. The number of steps that a checkpointing in ARIES has (a) four (b) one (c) two (d) three

132. Which layer of DBMS architecture implements file of records (a) Buffer Manager (b) Disk Space Management (c) File & access method layer (d) Query evaluation

133. An index that uses a data entry  $k^*$  as an actual data record (a) Clustered (b) Dense (c) Unclustered (d) Sparse

134. 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)  $n^h$  (c)  $1/n^h$  (d)  $n^{(h-2)}$



135. The cost (in terms of execution time) of scan operation in heap file is Where  $B =$  The number of data pages when records are packed on top pages with no wasted space  $R =$  The number of records per page  $D =$  The average time to read or write a disk page  $C =$  The average time to process a record (a)  $C + D$  (b)  $2D + C$  (c)  $B(D + RC)$  (d)  $0.5B(D + RC)$

136. If the search key is composite, the query in which each field in the search key is bound to a constant is called (a) equality query (b) inequality query (c) logical query (d) range query

137. Example for volatile storage is (a) magnetic disk (b) tape storage (c) optical storage (d) main memory

138. The buffer manager manages the available main memory by partitioning it into a collection of pages which we collectively refer to as (a) Buffer pool (b) Disk blocks (c) Sectors (d) Frames

139. Which tree is a static index structure (a) AVL Tree (b) B+ Tree (c) ISAM tree (d) B Tree

140. Which scheme uses a clever policy for creating new buckets and supports Inserts & Delete efficiently without the use of a directory (a) Extendable Hashing (b) Linear Hashing (c) Indexing (d) Static Hashing

**Ans:- d,a,d,b,a,d,a,a,b,b,d,c,a,a,c,a,d,a,c,b**

141. Which operation transfers the data item from the data base to a local buffer belonging to the transaction (a) Read (b) Atomicity (c) Write (d) Durability

142. Overlapping I/O and CPU activity reduce the amount of time disks and processors are idle and increase (a) System Time (b) System Throughput (c) Delay (d) Execution Time

143. A transaction holds an exclusive lock on when it wants to modify (a) Object (b) Block (c) Method (d) Client

144. Wri ghting a page to disk is an action in atomic writes (a) Duplicate (b) Redundancy (c) Atomic (d) Read

145. WAL stands for (a) With Ahead Log (b) Write Among Loss (c) Write Ahead Log (d) Write Ahead Loss

146. A schedule is conflict serializable if it is to some serial schedule (a) Conflict serializable (b) View serializable (c) Conflict equivalent (d) View equivalent

147. Exclusive lock can be applicable to operation (a) Read (b) Changes (c) Modified (d) Write

148. Which one can be used to ensure that at most one transaction is in its Validation/Write phases at any time (a) Subsection (b) Critical section (c) Mutual section (d) Primary section

149. The compensation log record C also contains a field called (a) Undo (b) Redo next LSN (c) Redo (d) Undo next LSN

150. Which of the following is the LSN of the next log record that is to be undone for the transaction that wrote update record (a) rec LSN (b) last LSN (c) undo next LSN (d) prev LSN

151. The number of steps that a checkpointing in ARIES has (a) two (b) three (c) four (d) one

152. Which layer of DBMS architecture implements file of records (a) Query evaluation (b) File & access method layer (c) Buffer Manager (d) Disk Space Management
153. Alternative (3) for what to store as a data entry in an index is (a) A data entry  $k^*$  is an actual data record (with search key value  $k$ ) (b) A search key value. (c) A data entry is a  $\langle k, rid \rangle$  pair, where  $rid$  is the record id of a data record with search key value  $k$ . (d) A data entry is a  $\langle k, rid-list \rangle$  pair, where  $rid-list$  is a list of record ids of data records with search key value  $k$ .
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156. Which key index can support a broad range of queries because it matches more selection conditions (a) secondary key index (b) null index (c) foreign key index (d) composite key index
157. The slowest class of storage devices is (a) Primary storage (b) Secondary storage (c) Archival storage (d) Tertiary storage
158. The buffer manager manages the available main memory by partitioning it into a collection of pages which we collectively refer to as (a) Disk blocks (b) Frames (c) Sectors (d) Buffer pool
159. The difference between leaf pages and non leaf pages in ISAM is (a) Leaf pages contain index entries. Non leaf pages contain index entries (b) Leaf pages contain data entries Non leaf pages contain index entries (c) Leaf pages contain data entries Non leaf pages contain data entries (d) Leaf pages contain index entries. Non leaf pages contain data entries
160. Which scheme uses a clever policy for creating new buckets and supports Inserts & Delete efficiently without the use of a directory (a) Indexing (b) Linear Hashing (c) Static Hashing (d) Extendable Hashing

**ANS:- A,B,A,C,C,C,D,B,D,C,B,B,D,D,B,D,D,B,B**

161. A transaction that may not always complete its execution successfully is called (a) Terminated (b) Fail (c) Aborted (d) Committed
162. In serial execution a short transaction could get stuck behind a long transaction leading to, unpredictable delays in (a) Delay time (b) Process execution time (c) System Throughput (d) Response time
163. DBMS typically uses a protocol to achieve Lock based concurrency control (a) Locking protocol (b) TCP/IP protocol (c) Client Server protocol (d) Dial up protocol
164. allow us to identify a point in a transaction and selectively roll back operation carried out after this point (a) State (b) Commit (c) Rollback (d) Save point
165. Who can take several steps to tune recovery subsystems (a) System Analyst (b) Application programmer (c) Client (d) DBA
166. If a transaction holding heavily used locks is being suspended by an OS then every other transactions needs the lock is queued, such queues are called as (a) Deadlocks (b) Latches (c) Atomicity (d) Convoys
167. A variant of 2PL called which can also prevent deadlock (a) Un-conservative 2PL (b) Conservative 2PL (c) Strict 2PL (d) Strict lock

168 . Which type of technique comes under a concurrency control without locking (a) Multi version concurrency control (b) Timestamp based concurrency control (c) Time out control (d) Optimistic and concurrency control

169 . The main purpose of ARIES recovery algorithm is (a) Repeating history during redo (b) Write ahead logging (c) Logging changes during undo (d) Write ahead logging, Repeating history during redo & Logging changes during undo

170. Which log record contains just the before image filed (a) redo only update log record (b) undo only update log record (c) update log record (d) all log records

171. The most recent checkpoint was taken at the of the execution with an empty transaction table and dirty page table (a) Centre (b) Middle (c) Beginning (d) End

172. The unit of information read from or written to disk is called (a) Page (b) Sector (c) File (d) Record

173. An index containing no duplicates and the search key contains some candidate key is called (a) Clustered Index (b) Unique Index (c) Unclustered Index (d) Sparse Index

174. The lowest level of the tree is called (a) Leaf node (b) Root node (c) Non leaf node (d) Siblings of non leaf node

175. The cost (in terms of execution time) of search with equality selection in heap file is Where  $B =$  The number of data pages when records are packed on top pages with no wasted space  $R =$  The number of records per page  $D =$  The average time to read or write a disk page  $C =$  The average time to process a record (a)  $2D + C$  (b)  $B(D + RC)$  (c)  $0.5B(D + RC)$  (d)  $C + D$

176. If the search key is composite, the query in which each field in the search key is bound to a constant is called (a) inequality query (b) equality query (c) range query (d) logical query

177. Primary storage consists of (a) optical disk (b) tapes (c) Magnetic disk (d) cache and main memory

178. Which layer in DBMS architecture hides the details of the underlying hardware (and possibly the OS) and allows higher levels of software to think of the data as a collection of pages (a) Buffer manager (b) Concurrency control (c) Recovery manager (d) Disk space manager

179. The measure of the capacity of a tree node in B+ tree is (a) Out degree of a node (b) Order of the tree (c) In degree of a node (d) Height of the tree

180. Which scheme uses a directory to support Inserts & Delete efficiently with no overflow pages (a) Extendable Hashing (b) Static Hashing (c) Linear Hashing (d) Indexing

**ANS:- C,D,A,D,D,D,B,C,D,B,C,A,B,A,C,B,D,D,B,A**

181 . A schedule that contains either an abort or a commit for each transaction whose actions are listed in it is called (a) Incomplete Schedule (b) Failed Schedule (c) Serial Schedule (d) Complete schedule

182 . Reading uncommitted data comes under (a) ww conflict (b) rr conflict (c) rw conflict (d) wr conflict

183 . What are the different types of locks which are used by different locking protocols (a) Exclusive lock (b) Closed lock (c) Shared & Exclusive lock (d) Shared lock

184 . Writing a page to disk is an action in atomic writes (a) Atomic (b) Read (c) Dupli

cate (d) Redundancy

185. Which of the following control the execution of transactions (a) Crash recovery (b) Transaction manager (c) Recovery manager (d) Concurrency control

186. A schedule 'S' is conflict serializable then precedence graph is (a) Squared (b) Rectangle (c) Acyclic (d) Cyclic

187. Locking mechanism limits (a) Duplicate (b) Consistency (c) Parallelism (d) Redundancy

188. Strict 2PL allows schedules (a) View equivalent (b) Conflict equivalent (c) Conflict serializable (d) View serializable

189. ARIES stands for (a) Algorithm for renewal isolation exploiting Symantic (b) Algorithm for recovery isolation exploiting Symantic (c) Algorithm for remove isolation exploiting Symantic (d) Algorithm for redundant isolation exploiting Symantic

190. Which table contains one entry for each dirty page in the buffer pool (a) Data table (b) Transaction table (c) Index table (d) Dirty page table

191. Checkpoint records are stored in (a) Secondary storage (b) Stable storage (c) Cache (d) RAM

192. Each record in a file is identified by (a) Bucket (b) Hash Function (c) Record id (d) Page id

193. An index containing no duplicates and the search key contains some candidate keys is called (a) Clustered Index (b) Unique Index (c) Sparse Index (d) Unclustered Index

194. In tree based indexing, the node pointer to the left of a key value  $k$  of non leaf pages point to a subtree that contains only data entries (a) Equal to  $k$  (b) Less than  $k$  (c) Greater than  $k$  (d) Greater than or equal to  $k$

195. The cost (in terms of execution time) of scan operation in sorted file is Where  $B$  = The number of data pages when records are packed on to pages with no wasted space  $R$  = The number of records per page  $D$  = The average time to read or write disk space  $C$  = The average time to process record (a) Search cost +  $B(D + RC)$  (b)  $1.5B(D + RC)$  (c)  $B(D + RC)$  (d)  $(D \log_2 B + C \log_2 R)$

196. The steps involved in index tuning algorithm are (a) superkey index selection, candidate index selection (b) candidate index selection (c) configuration enumeration (d) candidate index selection, configuration enumeration

197. Which RAID level refers Disk Mirroring with block striping (a) RAID level 1 (b) RAID level 2 (c) RAID level 0 (d) RAID level 3

198. Dirty is a which indicates whether the page has been modified after it was brought into buffer pool (a) Character variable (b) Boolean variable (c) Real variable (d) Integer variable

199. The height of the B+ tree with only leaf level and a single index level is (a) 3 (b) 4 (c) 1 (d) 2

200. In static hashing scheme, if we want to insert a new data entry into a full bucket, we need to add (a) Overflow page (b) Directory (c) File (d) Primary page 1.

**ANS: DDCABCCBDBCBCDABCA**