Questions:

1. What is the purpose of the wound-wait protocol mentioned in the paragraph?

- a) Speed up transaction processing
- b) Prevent old transactions from interfering with young transactions
- c) Allow young transactions to wait for old ones
- d) Both b) and c)

2. In a sequential file, how is the information accessed?

- a) Randomly
- b) In a serial manner from beginning to end
- c) Based on an index
- d) Through a hash function

3. Which of the following is an example of a sequential file?

- a) Database file
- b) Video file
- c) Indexed file
- d) Hash file

4. How is the end-of-file (EOF) typically identified in a sequential file?

- a) Sentinel record
- b) Hash function
- c) Directory system
- d) Index

5. What is the main drawback of using sequential files when records need to be retrieved in an unpredictable order?

- a) Inefficiency
- b) Complexity
- c) Slower processing
- d) Lack of storage space

6. What is an indexed file used for?

- a) Sequential processing
- b) Efficient retrieval of records in unpredictable order
- c) Quick access to entries within a data storage structure
- d) Hashing records

7. In an indexed file, where is the index usually stored?

- a) In a separate file on a different mass storage device
- b) In main memory
- c) Within the same file as data entries
- d) In the operating system's directory

8. What does hashing provide without the overhead of index maintenance?

- a) Sequential access
- b) Quick access to entries
- c) Data mining
- d) Efficient record retrieval

9. What is a hash function in the context of hashing?

- a) A function that retrieves records

- b) A function that converts key values into bucket numbers
- c) A function that maintains indexes
- d) A function that identifies the end-of-file

10. In a hash file, what are the sections into which data storage space is divided called?

- a) Sequences
- b) Buckets
- c) Blocks
- d) Sectors

11. Why is 41 chosen as the number of buckets in the hash file example?

- a) Prime number to avoid clustering
- b) Even number for simplicity
- c) Divisible by 5 for even distribution
- d) Arbitrary choice

12. What is data mining focused on discovering?

- a) Stored facts
- b) Previously unknown patterns
- c) Sequential files
- d) Indexed records

13. What distinguishes data mining from traditional database interrogation?

- a) Frequent updates
- b) Static data collections
- c) Online databases
- d) Dynamic data structures

14. What are data warehouses used for in data mining?

- a) Frequent updates
- b) Dynamic data collections
- c) Static data collections
- d) Online databases

15. In data mining, what does class description focus on?

- a) Random patterns
- b) Previously known patterns
- c) Properties characterizing a group of data items
- d) Properties that divide two groups

16. Which technique would be used to identify characteristics of people who buy small economical vehicles?

- a) Sequential processing
- b) Data mining
- c) Class description
- d) Class discrimination

17. What is the main application of hashing mentioned in the paragraph?

- a) Retrieving data from main memory
- b) Retrieving items from large blocks of data
- c) Storing data in mass storage
- d) Efficient access to entries within a data storage structure

18. What is the role of directories (or folders) in the hierarchical directory system used by most operating systems?

- a) Indexes containing links to sub-indexes

- b) Sequential file storage
- c) Hashing records
- d) Retrieving data from main memory

19. Which file system type is suitable for records that must be retrieved in an unpredictable order?

- a) Sequential file
- b) Indexed file
- c) Hash file
- d) Audio file

20. What is the significance of choosing a prime number in the context of dividing storage into buckets in a hash file?

- a) Allows even distribution of records
- b) Avoids common factors and reduces clustering
- c) Simplifies the hash function
- d) Increases the number of buckets for efficiency

Answers:

1. d) Both b) and c)
2. b) In a serial manner from beginning to end
3. b) Video file
4. a) Sentinel record
5. a) Inefficiency
6. b) Efficient retrieval of records in unpredictable order
7. a) In a separate file on a different mass storage device
8. b) Quick access to entries
9. b) A function that converts key values into bucket numbers
10. b) Buckets

11.a) Prime number to avoid clustering

12.b) Previously unknown patterns

13.b) Static data collections

14.c) Static data collections

15.c) Properties characterizing a group of data items

16.c) Class description

17.b) Retrieving items from large blocks of data

18.a) Indexes containing links to sub-indexes

19.b) Indexed file

20.b) Avoids common factors and reduces clustering