UNIT 1

1. Theoretical computer science refers to the collection of such topics that focus on the_____, as well as mathematical aspects of computing.
A. Abstract

B. Logical

C. Both (a) and (b)

D. None of the above

2._____ is neither an algorithm nor a program:

A. Computing

B. Pseudo code

C. Computer science

D. None of the above

3. _____ is an art of expressing a program in simple English that parallels the forms of a computer language:
A. Computing

B. Pseudo code

C. Computer science

D. None of the above

4. A main procedural program contains modules. These modules are also called_____.
A. Packages

B. Units

C. Both (a) and (b)

D. None of the above

5. Programming languages are the tools that allow communicating between_____-:
A. Developer

B. Computer

C. Developer and data

D. Both (a) and (b)

6. The computer languages allow solving real-world problems in the _____of the real world.
A. Context

B. Language

C. Both (a) and (b)

D. None of the above

7. The concepts in programming languages are essential knowledge to anyone who wants to become skilled in_____.

A. Computer programming

B. Data structures

C. Decoding

D. None of the above

8. What is a set of steps for carrying out a specific task called?
A. Programming

B. Source code

C. Data packages

D. Algorithm

9. A real world example of an algorithm would be a_____.
A. Recipe

B. Unit

C. Food item

D. None of the above

10. The actual text used to write the instructions for a computer program is called a_____.
A. Source code

B. Compiler

C. Both (a) and (b)

D. Algorithm

11. A compiler is a software tool that translates _____that the computer can understand.
A. Algorithm into data

B. Source code into data

C. Computer language into data

D. None of the above

12. The object code is then passed through a program called a _____ which turns it into an executable program.
A. Integer

B. Source code

C. Linker

D. None of the above

13. Data type is the classification of pieces of information in a_____.

A. Linker

B. Code

C. Program

D. None of the above

14. _____ is a container that represents a value in a program.
A. Compiler

B. Variable

C. Data type

D. None of the above

15. To distinguish between different data types, a computer uses special_____.
A. Internal codes

B. External codes

C. Compilers

D. None of the above

16. _____is the same thing as a variable with one major difference. the value of a constant does not change, while the value of a variable can change throughout a program.
A. Variable

B. Conditional

C. Constant

D. None of the above

17. Array is a special type of variable used in many programming languages, such as_____.
A. C

B. C++

C. Java

D. All of the above

18. What is a segment of code that executes repeatedly based on a certain condition?
A. Function

B. Array

C. Loop

D. None of the above

19. What is defined as a set of code used to carry out specific tasks?

A. Function

B. Class

C. Loop

D. None of the above

20. What is used for a real world object that is to be used in a program?
A. Program

B. Template

C. Car class

D. None of the above

21. _____ is object oriented programming language that uses virtual functions, multiple inheritance, exception handling, polymorphism, etc.
A. C++

B. C

C. GUI

D. None of the above

22. C++ provides comprehensive coverage of abstract classes, such as_____-.
A. Interfaces

B. Regular error handling, standard strings

C. I/O strings

D. All of the above

23. Making a selection of a choice from two alternatives of a group of alternatives refers to_____.
A. Selection

B. Transfer of control

C. Both (a) and (b)

D. None of the above

24. Which model is used to organize data in the main memory is called data structure?
A. Logical

B. Mathematical

C. Debugging

D. All of the above

25. An *index* or *subscript* is a _____ integer value, which indicates the position of a particular element in the array.
A. Negative

B. Positive

C. Plain

D. Both (a) and (b)

26. In which languages, the smallest subscript value is 1 and the largest subscript value is n.
A. C

B. C++ 12423

C. BASIC, PASCAL and FORTRAN

D. Java

27. A *linked list* is a linear collection of similar data elements called_____.
A. Subscript

B. Index

C. Nodes

D. Null

28. A _____is a linear list of data elements in which the addition of a new element or the deletion of an element occurs only at one end.
A. Top

B. Push and pop

C. Stack

D. None of the above

29. The hierarchical relationship between data elements can be easily represented using a nonlinear
data structure called_____.
A. Tree

B. Root node

C. Child nodes

D. None of the above

30. What is the process of finding the location of a given data element in the data structure called?
A. Deletion

B. Insertion

C. Traversing

D. Searching

UNIT -2

31. Who should know about the basic algorithmic toolbox structures that allow efficient organization and retrieval of data frequently used algorithms and basic techniques for modeling, understanding and solving algorithmic problems?
A. Computer scientist

B. Professional programmers

C. Both (a) and (b)

D. None of the above

32. Algorithms are at the heart of every non-trivial computer application and also a modern and active area of _____-.
A. Programming

B. Computer processing

C. Computer science

D. None of the above

33. Operations performed on scalar quantities are termed simple, while operations on vector data normally termed as_____.
A. Complex

B. Not very complex

C. Simple

D. None of the above

34. An algorithm may have _____ 'inputs' quantities.
A. One or more

B. Zero or more

C. Two or more

D. None of the above

35._____ refers to a finite set of steps, which, when followed, solves a particular problem.
A. Algorithm

B. Finiteness

C. Output

D. None of the above

36. The two main resources that we consider for an algorithm are_____.
A. Memory space and processor time
B. Space complexity and time complexity

C. Input and output properties

D. None of the above

37. Space complexity of an algorithm is the maximum amount of _____ required by it during execution.
A. Time

B. Operations

C. Memory space

D. None of the above

38. Frequently, the memory space required by an algorithm is a multiple of the size of input. State if the statement is True or False or Maybe.
A. True

B. False

C. Maybe

D. None of the above

39. In which algorithm, the number of times comparison to be done is also affected by the location of the value to be searched in the list?
A. Search

B. Space efficient

C. Searching

D. None of the above

40. For many problems such as sorting, there are many choices of algorithms to use, some of which are extremely_____.

A. Space efficient

B. Time efficient

C. Both (a) and (b)

D. None of the above

41. In the analysis of algorithms, what plays an important role?
A. Analysis

B. Growth factor

C. Time

D. None of the above

42. An algorithm performs lesser number of operations when the size of input is small, but performs more operations when the size of input gets larger. State if the statement is True or False or Maybe.

A. True

B. False

C. Maybe

D. None of the above

43._____ is a powerful technique which is used to invoke a function.

A. Computing

B. Recursion

C. Big Oh O (f)

D. None of the above

44. A function, which invokes itself repeatedly until some condition is satisfied, is called a_____.

A. Recursive function

B. Big Theta θ(f)

C. Big Omega Ω(f)

D. None of the above

45. The number of recursive calls is limited to the _____ of the stack.

A. Time

B. Ability

C. Quality

D. Size

46. _____functions, which invoke (call) each other, are called mutually recursive functions.

A. Two or more

B. One or more

C. Three or more

D. None of the above

47. For certain problems, a recursive solution is _____as in the case of factorial of a number:

A. Straightforward

B. Single

C. Both (a) and (b)

D. None of the above

48. A recursive function is often less efficient compared to an iterative function. But it is more_____.

A. Elegant

B. Complex

C. Simple

D. None of the above

49. An iterative function is preferred when its recursive equivalent is_____.

A. Complex

B. Simple

C. Efficient

D. None of the above

50. What is a good approach to remove recursion from an algorithm?

A. Recursion

B. Stack implementation

C. Regressive

D. None of the above

51. To verify whether a function grows faster or slower than the other function, we have some asymptotic or mathematical notations, which is_____.

A. Big Omega Ω (f)

B. Big Theta θ (f)

C. Big Oh O (f)

D. All of the above

52. A subroutine can be coded so that it may call itself recursively, at_____, in order to perform its task.

A. One or more places

B. Two or more places

C. More places

D. None of the above

53. A function in which f(n) is Ω(g(n)), if there exist positive values k and c such that f(n)>= c*g(n), for all n>=k. This notation defines a lower bound for a function f(n):

A. Big Omega Ω (f)

B. Big Theta θ (f)

C. Big Oh O (f)

D. None of the above

54. An algorithm that indicates the amount of temporary storage required for running the algorithm, i.e., the amount of memory needed by the algorithm to run to completion is termed as_____.

A. Space complexity

B. Big Theta θ (f)

C. Big Oh O (f)

D. None of the above

55. The amount of time the computer needs to run to completion is known as_____:

A. Space complexity

B. Time complexity

C. Recursive function

D. None of the above

56. How many important properties (features) of algorithm are there?
A. Three

B. Five
C. Two
D. None of the above

57. _____algorithm is one which utilizes minimum processor time and requires minimum memory space during its execution.
A. Best

B. Efficient

C. Both (a) and (b)

D. None of the above

58. In simple terms, we can say that an algorithm is a step-by-step procedure for performing some task in a finite amount of time. State if the statement is true or false.
A. False
B. True

C. Maybe

D. None of the above

59. Each operation must have a definite meaning and it must be perfectly clear. All steps of an algorithm need to be precisely defined. The actions to be executed in each case should be _____.

A. Rigorously specified

B. Clearly specified

C. Both (a) and (b)

D. None of the above

60. In general, a problem may be defined as a state of thing that is not in the_____.

A. Wrong order

B. Opposite order

C. Right order

D. None of the above

UNIT 3
61. What plays an important role in programming?
A. Data

B. Computer

C. Information

D. None of the above

62. Data must be represented, organized, stored, processed and managed in a way that facilitates_____.
A. Easy access

B. Retrieval

C. Both (a) and (b)

D. Withdrawal

63._____ is a collection of data elements of similar data types.
A. String

B. Arrays

C. Both (a) and (b)

D. NULL

64. Data elements grouped in an array can be of any basic data type like:
A. Integer

B. Float or character

C. Any user-defined data types

D. All of the above

65. Pattern matching refers to string_____.
A. Searching

B. Matching problem

C. Both (a) and (b)

D. None of the above

66. One of the data types which can be used for storing a list of elements is an_____.

A. Integer

B. String

C. Array

D. None of the above

67. A programmer can access a particular element of an array by using one or more_____
A.Indices

B. Subscripts

C. Single-dimensional array

D. Both (a) and (b)

68. If more than one subscript is used, an array is known as a_____.
A. One- dimensional array

B. Single dimensional array

C. Multi- dimensional array

D. None of the above

69. What is the simplest form of an array?

A. One- dimensional array

B. Multi- dimensional array

C. Single- dimensional array

D. None of the above

70. What is allocated to the array at compile-time, before the program is executed?
A. Integer

B. Strings

C. Elements

D. Memory

71. The memory address of the first element of an array is contained in the _____.
A. Next array

B. Computer program

C. Name of the array

D. None of the above

72. Each element in an array is associated with a unique subscript value, starting
from_____:

A. 1 to size-1

B. 0 to size-1

C. -1 to size-0

D. None of the above

73. An array can be initialized in how many ways?

A. Two

B. Three

C. One

D. None of the above

74. Once an array is declared and initialized, various operations, such as,_____can be performed on the array.
A. Traversing and searching

B. Insertion and deletion

C. Sorting and merging

D. All of the above

75. To perform an operation on an array, the elements of the array need to be accessed. The process of accessing each element of an array is known as_____.
A. Insertion

B. Traversal

C. Both (a) and (b)

D. None of the above

76. The process of finding the occurrence of a particular element in an array is known as_____:
A. Linear search

B. Binary search

C. Searching

D. None of the above

77. A search is said to be successful or unsuccessful depending on whether the data item is_____.
A. Found or not

B. Not Found

C. It is irrelevant

D. None of the above

78. Which technique is suitable for performing a search in a small array or in an unsorted array?

A. Binary search

B. Traversing

C. Linear search

D. Sums

79. The process of adding a new element to an existing array is known as_____.

A. Deletion

B. Insertion

C. Searching

D. None of the above

80. Deletion of an element from the array reduces the size of the array by_____.
A. One

B. Two

C. Three

D. Minus one

81. Most high-level languages, including _____, support arrays with more than one dimension.
A. HTML

B. Java

C. C++

D. C

82. Two-dimensional arrays are useful when the elements being processed are to be arranged in the form of_____
A. Rows

B. Columns

C. Both (a) and (b)

D. None of the above

83. The elements stored in a two-dimensional array can be _____in many ways:
A. Manipulated

B. Processed

C. Performed

D. Manipulated or processed

84. A three-dimensional array is defined as an array in which _____ subscript values are used to access an individual array element.
A. Three

B. Two

C. One

D. None of the above

85. A three-dimensional array can be declared as follows:.
A. int A[1][1][1];

B. int A[2][2][2];

C. int A[3][3][3];

D. None of the above

86. A matrix is an arrangement of items into labeled rows and columns within a_____-.
A. Tabe

B. Row

C. Column

D. None of the above

87. An n × n matrix is known as_____.
A. Rectangular matrix

B. Uniform matrix

C. Square matrix

D. None of the above

88. A matrix having irregular numbers of items in each row is known as_____.
A. Uniform matrix

B. Ragged matrix

C. Square matrix

D. None of the above

89. An n × m matrix is known as_____, i.e., one whose size may not be the same in both dimensions.
A. Rectangular matrix

B. Uniform matrix

C. Ragged matrix

D. None of the above

90. A matrix having a larger number of elements with zero value than the number of nonzero elements is said to be a_____
A. Diagonal matrix

B. Sparse matrix

C. Triangular matrix

D. None of the above

UNIT 4

91. _____is a linear data structure in which an element can be added or removed only at one end.

A. Stack

B. Queue

C. String

D. None of the above

92. In stack terminology, the _____operations are known as push and pop operations, respectively.

A. Insert

B. Delete

C. Both (a) and (b)

D. None of the above

93. A stack works on the principle of_____.

A. LIFO

B. LAFO

C. LIFF

D. None of the above

94. A common example of a queue is people waiting in line at a_____.

A. Bus stop

B. Movie hall

C. Shopping mall

D. None of the above

95. What is one of the common examples of a stack?

A. A pile of books

B. Bus stop

C. A basket of fruits

D. A carat of eggs

96. An _____ is an ordered collection of elements that share the same name.

A. Array

B. Stack

C. Pile

D. None of the above

97. What is it that the compiler needs to know about an array that it needs to know about an ordinary variable known as a *scalar variable* in the trade?
A. Type

B. Storage class

C. Both (a) and (b)

D. None of the above

98. An array is a collection of elements of the same data type and it can be referred to with a_____.
A. Single array

B. Single name

C. Single queue

D. None of the above

99. An array can be_____type.

A. Single dimension

B. Two-dimensional

C. Three-dimensional

D. All of the above

100. A full-subtractor is a combinational circuit that performs _____subtraction.

A. 3-bit

B. 2-bit

C. n-bit

D. None of the above

111. The first element in the array is numbered; so the last element is _____ than the size of the array.

A. 1 less

B. 1 greater

C. Half

D. None of the above

112. The first element is referred to as array [_____] and any element at x position is referred to as array[_____].
A. 0, X

B. X, 0

C. X, Y

D. None of the above

113.What are used to refer to array elements?
A. Nodes

B. Subscripts

C. Memory locations

D. Both (a) and (b)

114. The method of subscribing arrays in '_____' is different from that used in many other programming languages.
A. C

B. C++

C. C+++

D. Java

115. The first element in the array is numbered_____.
A. -1

B. 1

C. 0

D. None of the above

116. When a stack is organized as an array, a variable named Top is used to point to the top element of the stack. Initially, the value of Top is set to_____to indicate an empty stack.
A. -1

B. 0

C. 1

D. x

117. What happens when the stack is full and there is no space for a new element, and an attempt is made to push a new element?
A. Overflow

B. Underflow

C. Top

D. None of the above

118. The total number of elements in a stack at a given point of time can be calculated from the value of_____.
A. Overflow

B. Top

C. Queues

D. Underflow

119. A simple application of stacks is called_____.

A. prefix notations

B. Postfix notations

C. Reverse strings

D. None of the above

120. Jan Lukasiewicz, who suggested two alternative notations to represent an arithmetic expression belonged to which nationality?
A. English

B. Polish

C. German

D. Swedish

121. In a computer system, when an _____ expression in an infix notation needs to be evaluated, it is first converted into its postfix notation?
A. Algebraic

B. Arithmetic

C. Trigonometric

D. Geometric

UNIT 5

122. A collection of data items of similar type arranged in a sequence is termed as?
A. Memory space

B. Static data structure

C. Data structure

D. List

123. Once memory space is allocated to an array, it cannot be_____.
A. Expanded

B. Expanded or contracted

C. Listed

 D. None of the above

124. If the number of elements to be stored in an _____increases or decreases significantly at runtime, it may require more memory space or result in wastage of memory, both of which are unacceptable.
A. Data structure

B. List

C. Array

D. Computer

125. A dynamic data structure is one in which the memory for elements is allocated dynamically at runtime. Is this statement True or False?
A. True

B. False

C. May be

D. Partially true and partially false

126. Which is an example of a dynamic data structure?

A. Linked list

B. Memory location

C. Stack

D. String

127. A *linked list* is a linear collection of homogeneous elements called_____.
A. Runtime

B. Nodes

C. Pointers

D. None of the above

128. Depending on what on what can a linked list be classified into various other types?
A. The number of pointers in a node

B. The purpose for which the pointers are maintained

C. Both (a) and (b)

D. None of the above

129. In a singly-linked list (*linear linked list*), how many fields does each node consists of?
A. One

B. Three

C. Two

D. Zero

130. The last node of the singly-linked list contains_____.
A. Info

B. NULL

C. Next

D. None of the above

131. A linked list contains a list pointer variable _____that stores the address of the first node of the list.
A. Start

B. NULL

C. Next

D. Empty list

132. To maintain a linked list in memory, how many parallel arrays of equal size are used?
A. One

B. Two

C. Decoders

D. Three

133. As memory is allocated dynamically to a linked list, a new node can be inserted anytime in the list. For this, the *memory manager* maintains a special linked list known as_____.
A. Free pool

B. Memory bank

C. Free storage list

D. All of the above

134. While creating a linked list or inserting an element into a linked list, whenever a request for the new node arrives, the memory manager searches through the ------------for the block of desired size
A. Free pool

B. Memory bank

C. Free storage list

D. None of the above

135. What does creating a node mean?
A. Defining its structure

B. Allocating memory to it

C. Initialization

D. All of the above

136. _____a list means accessing its elements one by one to process all or some of the elements.
A. Traversing

B. Creating

C. Linking

D. None of the above

137. Searching a value (say, item) in a linked list means finding the position of the node, which stores _____ as its value?
A. node

B. item

C. info

D. None of the above

138. A situation where the user tries to delete a node from an empty linked list is termed

as_____.
A. Underflow

B. Overflow

C. Pointers

D. None of the above

139. To delete a node from the end of a linked list, the list is traversed up to the last _____.
A. Pointer

B. Node

C. List

D. None of the above

140. Since a doubly-linked list allows traversing in both the forward and backward directions, it is also referred to as a_____.

A. Multi-way list

B. One-way list

C. Two-way list

D. None of the above

UNIT 6

141. A _____is a non-linear data structure representing the hierarchical structure of one or more elements known as *nodes*.
A. Tree
B. Child nodes
C. Leaf nodes
D. None of the above

142. Each node of a tree stores a data value and has zero or more pointers pointing to the other nodes of the tree, which are also known as its_____.
A. Child nodes
B. Leaf nodes
C. Root
D. None of the above

143. The node at the top of a tree is known as the _____of the tree:
A. Heap
B. Leaf nodes
C. Child nodes
D. Root

144. Internal nodes have_____.
A. Child nodes
B. Parent nodes
C. Both (a) and (b)
D. None of the above

145. Which concept is useful while writing programming code for implementing various operations on trees?

A. Recursion

B. Huffman's algorithm

C. Internal nodes

D. None of the above

146. A binary tree is a special type of tree, which can either be empty or have a finite set of nodes, such that, one of the nodes is designated as the root node and the remaining nodes are partitioned into sub trees of the root nodes known as_____.

A. Left sub tree

B. Right sub tree

C. Both (a) and (b)

D. Heap tree

147. Unlike a general tree, each node in a binary tree is restricted to have at the most _____child nodes only.

A. Four

B. Three

C. Two

D. One

148. A binary tree is a _____data structure; each node belongs to a particular level number.

A. Dual level

B. Multilevel

C. Tri level

D. Single level

149. The nodes belonging to the same parent node are known as_____.

A. Sibling nodes

B. Parent nodes

C. Child nodes

D. None of the above

150. The depth of a binary tree is the highest level number of any _____ in the binary tree.

A. Leaf node

B. Parent node

C. Sibling node

D. None of the above

151. Which line connects any two nodes?

A. Edge

B. Depth

C. Level

D. None of the above

152. The degree of a node is equal to the number of its_____.

A. Child nodes

B. Parent nodes

C. Sibling nodes

D. Tree nodes

153. The nodes belonging to the same parent node are known as_____.
A. Parent nodes

B. Sibling nodes

C. Tree nodes

D. None of the above

154. A binary tree is said to be a complete binary tree if all the leaf nodes of the tree are at

_____.

A. Same level

B. Opposite level

C. Different level

D. Adjacent level

155. A binary tree is said to be an extended binary tree (also known as 2-tree) if all of its nodes
are of _____.
A. Zero degree

B. Two degrees

C. Both (a) and b)

D. None of the above

156. Like _____- binary trees can also be represented in two ways in the memory—array
(sequential) representation and linked representation.
A. Stacks

B. Queues

C. Strings

D. Both (a) and (b)

157. In the array representation, what is represented sequentially in memory using a single one-
dimensional array?
A. Binary tree
B. Stacks

C. Nodes

D. None of the above

158. The linked representation of a binary tree is implemented by using a linked list having an_____.
A. info part

B. Two pointers- left and right

C. Both (a) and (b)

D. One pointer

159. Traversing a binary tree refers to the process of visiting each and every node of the tree exactly how many times?
A. Once

B. Twice

C. None

D. Thrice

160. In how many different ways can a tree be traversed?

A. Two ways

B. Three ways

C. One way

D. It cannot be traversed

161. In pre-order traversal, the root node is visited before traversing its_____subtrees.
A. Left

B. Right

C. Both (a) and (b)

D. None of the above

162. In which traversal, the root node is visited after the traversal of its left subtree and before the traversal of its right subtree?
A. Pre-order traversal

B. In-order traversal

C. Post-order traversal

D. Level-order traversal

163. Elements in a nonlinear data structure do not form a sequence for example_____.
A. Tree

B. Hash tree

C. Binary tree

D. All of the above

164. One way is to have the linear relationship between the elements by means of sequential memory locations and such linear structures are called _____.
A. Linked list

B. Stacks

C. Arrays

D. All are the same

165. What is one of the most common operations that is performed on trees?
A. Traversal of nodes

B. Threads

C. Pointers

D. None of the above

166. In which tree, the right NULL pointer of each node (not having a right child node) points to its in-order successor?
A. Right-threaded binary tree

B. Left-threaded binary tree

C. Full-threaded binary tree

D. All of the above

167. A binary search tree, also known as_____.
A. Binary tree

B. Binary sorted tree

C. Sibling node

D. Heap trees

168. Which code for an alphabet (set of symbols) is generated by constructing a binary tree with nodes containing the symbols to be encoded and their probabilities of occurrence?
A. Algorithm

B. Hughman code

C. Huffman code

D. Canonical Huffman codes

169. Trees are often used in implementing _____ and hence it is considered as prime application of trees.
A. Chess

B. Players

C. Games

D. None of the above

170. The process of inserting a node in a binary search tree can be divided into how many steps?

A. Three

B. Two

C. Four

D. None of the above

UNIT-5

171. A data structure is a group of data elements grouped together under _____.
A. One name

B. Different names

C. Multiple names

D. Same name

172. What finds the largest element in the array, and puts it in the proper place?
A. Selection sort

B. Insertion sort

C. Quick sort

D. None of the above

173. Which array is the fastest on an average, but sometimes unbalanced partitions can lead to very slow sorting?
A. Insertion sort

B. Selection sort

C. Quick sort

D. None of the above

174. In computer science, what is of immense importance and is one of the most extensively researched subjects?
A. Sorting

B. Searching

C. Both (a) and (b)

D. Inflecting

175. It is estimated that around _____ of all CPU cycles are used to sort data?

A. 10 per cent

B. 50 per cent

C. 30 per cent

D. 25 per cent

176. In which field, a sorting algorithm refers to an algorithm the function of which is to put elements of a list in a certain order?
A. Computer science

B. Mathematics

C. Both (a) and (b)

D. Data structures

177. Which of the following statements is correct?

(i) Sorting is also often used to produce human-readable output.
(ii) The output should not be a permutation or reordering of the input.
A. (ii) only

B. (i) only

C. Both are correct

D. None is correct

178. Since the beginning of computing, the sorting problem has greatly attracted the attention of_____.
A. Scientists

B. Researchers

C. Mathematicians

D. None of the above

179. The analysis of bubble sort was done as early as_____.
A. 1956

B. 1946

C. 1916

D. 1936

180. _____ is a method of arranging keys in a file in the ascending or descending order.
A. Lexicographical orders

B. Library sort

C. Algorithm

D. Sorting

181. Library sort was first published in_____.
A. 2004

B. 2001

C. 2008

D. 1998

182. Sorting makes handling of _____ in a file easier.
<mark>A.</mark> Records

B. Arrays

C. Information

D. Data

183. What refers to a simple sorting algorithm?
A. Bubble sort

<mark>B.</mark> Insertion sort

C. Unsorted arrays

D. None of the above

184. _____is efficient for data sets which are already substantially sorted. The time complexity is O(n + d), where d is the number of inversions.
<mark>A.</mark> Insertion sort

B. Sorted array

C. Unsorted array

D. None of the above

185. Compared to insertion sort, _____ are more advanced algorithms.
A. Quick sort

B. Heap sort

C. Merge sort

<mark>D.</mark> All of the above

186. In abstract terms, each iteration of insertion sort removes an element from the input data and then inserts it into the correct position in the _____ that is already sorted.
<mark>A.</mark> List

B. Stack

C. String

D. Array

187. An array sorted in the reverse order is the _____ case input.
<mark>A.</mark> Worst

B. Best

C. Somewhat bad

D. None of the above

188._____ is a simple sorting technique to sort a list of elements.

A. Insertion sort

B. Selection sort

C. Sorting array

D. None of the above

189. The running time of heap sort is _____.
A. G(N*lgN)

B. N(N*lgN)

C. O(N*lgN)

D. None of the above

190. There is one to one correspondence between elements of the _____of the tree.
A. Array and trees

B. Array and nodes

C. Arrays and nodes

D. None of the above

191. To perform the heap sort, you need to create a tree with all nodes greater than their _____.

A. Sibling

B. Children

C. Parents

D. None of the above

192. What is one of the fastest and simplest sorting algorithms?

A. Selection sort

B. Tree sort

C. Heap sort

D. Quick sort

193. The most-used orders are_____.
A. Numerical order

B. Lexicographical order

C. Both (a) and (b)

 D. None of the above

194. _____ refers to the set of all possible solutions to a problem.
A. External searching

B. Brute-force search

C. Search space

D. None of the above

195. Brute-force search, commonly known as_____.
A. Naive algorithm

B. Uninformed algorithm

C. Both (a) and (b)

D. Search algorithm

196. Searching refers to an operation of finding the location of an item in a_____.
A. Table

B. File

C. Both (a) and (b)

D. Column

197. When the records are stored in _____ or any secondary storage, then the searching is known as external searching.
A. Disk

B. Files

C. Tape

D. All of the above

198. Which is the easiest and least efficient searching technique?

A. Fibonacci search

B. Binary search

C. Linear search

D. None of the above

199. The average searching time for Fibonacci search is_____.
A. N(log N).

B. S(log N).

C. O(log N)

D. None of the above

200. Fibonaccian search, also referred to as Fibonacci search, is a _____algorithm for searching a sorted array by narrowing possible locations to progressively smaller intervals.
A. Divide-and-rule

B. Divide-and-conquer

C. Divide-and-fall

D. None of the above