



BRAINSTORM GROUP (BSG)

CPT121
Introduction to Problem Solving
Compiled E-Question (2021-22)



Federal University of Technology Minna



09068836600, 09068836661



brainstormgroupfutmrx001@gmail.com

BSG CPT121 Compiled Questions (2021/22)

1. Which of the following can be referred to as a general problem-solving framework?
A. Algorithm B. Heuristic
C. Trial and error D. Means-end-analysis
2. The Tower of Hanoi paradigm is a type of _____ problem solving technique
A. Algorithm B. Heuristic
C. Trial and error D. Means-end-analysis
3. Abstraction is the creation of well-defined interface to show the inner workings of computer programs from users
A. True B. False
4. 8.2 is a _____
A. String B. Integer
C. Boolean D. Real
5. Ackerman's function is an example of _____ recursion
A. Mutual B. Nested
C. Exponential D. Binary
6. A flowchart starts with a/an _____
A. Rectangle B. Oval
C. Diamond D. Parallelogram
7. _____ is an effective step-by-step number of steps to solve a problem
A. Flowchart B. Pseudocode
C. Algorithms D. Problem solving
8. _____ are regarded as syntax-free description of an algorithm
A. Heuristic B. Algorithm
C. Pseudocode D. Flowchart
9. By standards, in designing a flowchart, one should stick to _____
A. One font B. At least one font
C. Two fonts D. At least two fonts
10. _____ is a formula that involves no looping of any kind, but standard mathematical operations in a formula to compute the answer
A. Close-form solution
B. Open-form solution
C. Mixed-form solution
D. No-loop-form solution
11. Which of the following interconnects two or more different segments/division in an organization?
A. Process flow chart
B. Workflow chart
C. Swimlane flowchart
D. Data flowchart
12. Abstraction is the creation of well-defined interface to hide the inner workings of computer programs from users
A. True B. False
13. Permutation (nPr) is an example of _____ recursion
A. Exponential B. Binary
C. Nested D. Linear
14. Which of the following is good in documenting a whole process that interacts with different segments of an organization or requires collaboration among other teams?
A. Process flow chart
B. Workflow chart
C. Swimlane flowchart
D. Data flowchart
15. Which of the following comes in handy when designing or analyzing a system?
A. Process flow chart
B. Workflow chart
C. Swimlane flowchart
D. Data flowchart
16. Working-backwards is also an example of
A. Algorithm
B. Heuristic
C. Trial and error
D. Means-end-analysis
17. In which of the following types of recursion if one of the arguments to the recursive function is the recursive function itself?
A. Linear B. Mutual
C. Binary D. Nested
18. _____ are simply regarded as implementation of an algorithm in the form of annotations and informative texts
A. Flowchart B. Algorithms
C. Pseudocode D. A and C

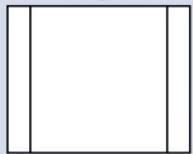
19. _____ help programmers to eliminate the hassle of being bound down with syntax rules of specific programming languages
 A. Flowchart B. Pseudocode
 C. Algorithms D. Both A and B
20. Which of the following is regarded as a cooked up representation of algorithm?
 A. Pseudocode B. Flowchart
 C. Algorithms D. Piegraph
21. A flowchart ends with _____?
 A. Parallelogram B. Oval
 C. Rectangle D. Diamond
22. _____ is the recursive algorithms with simpler or smaller values
 A. Base case B. Recursive base
 C. Combine case D. Divide case
23. _____ type of recursion is used to determine whether an integer is an odd or even one.
 A. Mutual B. Exponential
 C. Nested D. Binary
24. Flowcharts need a balance between information and _____
 A. Design B. Implementation
 C. Script D. Code
25. In an algorithm, which of the following joins two separate process?
 A. Merge B. Connector
 C. Off-page connector D. Loop limit
26. Combination (nC_r) is an example of _____ recursion.
 A. Nested B. Binary
 C. Exponential D. Mutual
27. By standards, colors in flowcharts should not exceed _____
 A. One B. Two
 C. Three D. Four
28. Which of the following indicates the beginning or end of a repeated step
 A. Oval B. Loop limit
 C. Connector D. Terminator
29. In _____, data must be accessed sequentially
 A. Paper tape B. Tape data
 C. Database D. Data storage
30. In _____, data can be accessed in any order
 A. Paper tape B. Tape data
 C. Database D. Data storage
31. Which of the following can be used to organize a team?
 A. Process flow chart B. Workflow chart
 C. Swimlane flowchart D. Data flowchart
32. Which of the following types of flowcharts applies the BPMN?
 A. Process flow chart B. Workflow chart
 C. Swimlane flowchart D. Data flowchart
33. What does BPMN mean?
 A. Business Process Modeling Notation B. Business Procedures Modeling Notation
 C. Business Process Modeling Niche D. Business Process Methodology notation
34. Which of the following shows data stored in any format
 A. Internal data B. Tape data
 C. Database D. Data storage
35. To denote the data input to an old computer in a flowchart, we use _____
 A. Paper tape B. Tape data
 C. Database D. Data storage
36. Which of the following shows data stored locally
 A. Internal storage B. Tape data
 C. Database D. Data storage
37. Issues that have no clear goals, no solution paths, and no expected results are referred to as _____
 A. Ill-defined problems B. Well-defined problems
 C. Jagajaga problems D. All of the above
38. Which of this is referred to as exhaustive approach?
 A. Dynamic programming approach B. Divide -and-conquer approach
 C. Brute-force approach D. Randomized approach

39. Identify the odd one out
- Introspection
 - Computer modeling
 - Simulation
 - Experimentation
 - Differentiation
40. Finding and fixing of error code in a program code is called _____
- Bugging
 - Debugging
 - Compiling
 - Coding
41. The second step of solving a problem is _____
- Problem identification
 - Model formulation
 - Development of algorithm
 - Writing the algorithm
 - Testing the algorithm
42. Rule of thumb is an example of _____ problem solving framework
- Algorithm
 - Heuristic
 - Trial and error
 - Means-end-analysis
43. Before solving a problem, the problem is first
- Clearly identified
 - Solved
 - Selected
 - Inducted
44. _____ is a problem solving technique that entails trying out a number of different solutions and ruling out those that did not work
- Heuristic
 - Trial-and-error
 - Means-end analysis
 - Algorithm
45. _____ can be thought of as recipe with highly detailed instructions.
- Heuristic
 - Algorithm
 - Trial-and-error
 - Means-end-analysis
46. Which of this is considered as the first step to programming?
- Pseudocode
 - Algorithm
 - Flowchart
 - Problem definition
47. All are characteristics of algorithms except
- Finiteness
 - Uniqueness
 - Effectiveness
 - Precision
48. _____ represent linear task sequentially performed one after another
- Iteration
 - Sequence
 - Looping
 - Function
49. Which of this datatype is used for name?
- Character
 - Integer
 - Real
 - Boolean
50. The diagram below represents _____
- 
- A. Data storage B. Tape data
C. Internal storage D. Data storage
51. The diagram below represents _____
- 
- A. Data storage B. Tape data
C. Internal storage D. Data storage
52. The diagram below represents _____
- 
- A. Paper tape B. Tape data
C. Internal storage D. Data storage
53. The diagram below represents _____
- 
- A. Paper tape B. Tape data
C. Internal storage D. Data storage
54. _____ can be regarded as step-by-step instructions to solve a problem
- Heuristic
 - Algorithm
 - Trial-and-error
 - Means-end-analysis
55. If a tower of Hanoi paradigm is solved in 16,383 moves, what is the number of disks in the paradigm?
- 13
 - 12
 - 14
 - 15
56. What determines the process in a flowchart?
- Parallelogram
 - Oval
 - Rectangle
 - Diamond

57. Which of the following methods do students use to complete a research work or long essay for school work?
A. Heuristic B. Algorithm
C. Trial-and-error D. Means-end-analysis

58. Algorithms produces _____ results every time they are used.
A. Different B. The same C. Varying
D. Sometimes same and sometimes different

59. The diagram below represents _____



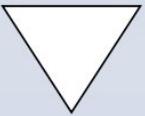
- A. Connector B. Off-page connector
C. Predefined process D. Loop limit

60. The diagram below represents _____



- A. Connector B. Off-page connector
C. Predefined process D. Loop limit

61. The diagram below represents _____



- A. Connector B. Merge
C. Predefined process D. Off-page connector

62. In binary and gray code method, a bit with different value to the previous one means that the corresponding disk is one position to the left or right of the previous one
A. True B. False

63. Which of the datatype is used for age?
A. String B. Boolean
C. Integer D. Real

64. The commonly used representation of algorithms are _____
A. Divide-and-conquer
B. Flowchart and pseudocode
C. Flowchart and coding
D. Debugging and pseudocode

65. In binary and gray code method, there is _____ binary digit for each disk
A. One B. Two
C. Three D. Four
66. In recursion method the sub-solutions are combined to formed the overall solution.
A. True B. False
67. All of the following are different obstacles that can interfere with the ability to solve a problem quickly and efficiently except
A. Functional fixedness
B. Irrelevant information
C. Assumptions D. Heuristics

68. Which problem-solving strategy entails choosing and analyzing an action at a series of smaller steps to move closer to the goal/rest?
A. Heuristic B. Algorithm
C. Trial-and-error D. Means-end-analysis

69. Which of the following is applied in ranking potential solutions?
A. Effectiveness B. Timeliness
C. Manageability D. Expense
E. All of the above

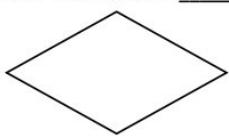
70. Writing some sets of instruction the computer understands is _____
A. Source coding B. Coding
C. Compiling D. Executing

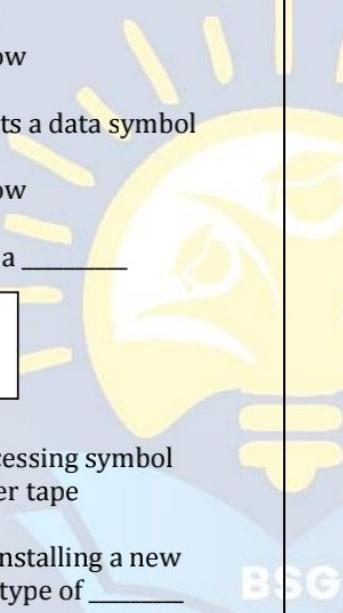
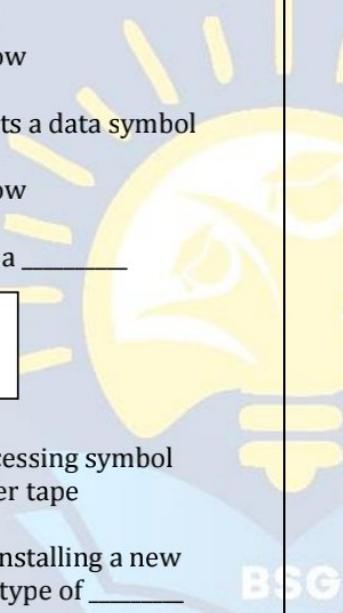
71. _____ are regarded as mental shortcuts to solve a problem
A. Heuristic B. Algorithm
C. Trial-and-error D. Means-end-analysis

72. In binary and gray code method, a bit with different value to the previous one means that the corresponding disk is two position to the left or right of the previous one
A. True B. False

73. Repetition is called _____ statement?
A. Condition B. Loop
C. Sequence D. Test

74. The more complex a problem is the more misleading and/or irrelevant the information is
A. True B. False

75. The tendency to view problems in a customary manner and prevents people from seeing the different options to the solutions of a problem is _____
- Assumption
 - Functional fixedness
 - Irrelevant information
 - Familiarity
76. Which of the following entails moving the smallest pieces over one, then moving the next over another
- Iteration
 - Recursion
 - Non-recursion
 - Binary and gray code
 - Graphical
77. _____ symbol is regarded as a branching symbol
- Decision
 - Processing
 - Input
 - Data storage
78. _____ are graphical algorithmic solutions that uses symbols
- Pseudocodes
 - Flowcharts
 - Algorithms
 - Trial-and-error
79. _____ symbol is usually a Yes/No or True/False response.
- Decision
 - Processing
 - Input
 - Data storage
80. Each shape in an algorithm represents a step
- True
 - False
81. Which algorithmic measure of efficiency in mostly used and preferred?
- Logarithmic
 - Constant
 - Exponential
 - Cubic
82. Exponential algorithms are generally unreasonable in practice except for _____ values of n
- Very small
 - High
 - Medium
83. Problem solving is a flawless process
- True
 - False
84. Which of the following shows the direction/flow of an algorithmic representation using a flowchart?
- Arrow
 - Rectangle
 - Oval
 - Parallelogram
85. Complex algorithms are not necessarily deterministic (no finite number of steps)
- True
 - False
86. _____ type of algorithms are typically easy to understand than words and also used in business diagrams
- Flowcharts
 - Pseudocode
 - Piechart
 - Both A and B
87. Which of the following represents an action symbol
- Oval
 - Rectangle
 - Arrow
 - Parallelogram
88. _____ are regarded generally as precise sequence of instructions for solving a problem
- Flowchart
 - Pseudocode
 - Algorithm
 - Step-by-step
89. Algorithms are _____ of programming languages
- Independent
 - Dependent
 - A and B
90. _____ is regarded as a diagrammatical representation of an algorithm
- Pseudocode
 - Flowchart
 - Program diagram
 - Code visualization
91. In creating a to-do list or a schedule, which of the following method is applied?
- Heuristic
 - Algorithm
 - Means-end-analysis
 - Trial-and-error
92. Other problem-solving strategies includes all except
- Develop a decision matrix
 - Bring in a facilitator
 - Step away from the problem
 - Using past experience
 - None of the above
93. _____ are used in graphical algorithmic representation to show the processing of raw data into information.
- Rectangle
 - Square
 - Arrow
 - Oval
94. The symbol below is a _____ symbol
- 

- A. Document symbol
 B. Decision symbol
 C. Input/output symbol
 D. Processing symbol
95. In binary and gray code solutions for the tower of Hanoi paradigm, which of the following represents the largest disk?
 A. Leftmost disk
 B. Rightmost disk
 C. Middle disk
 D. Any location, depending one's choice
96. Which of the following starts and/or ends an algorithm?
 A. Rectangle B. Oval
 C. Parallelogram D. Arrow
97. Which of the following presents a data symbol
 A. Rectangle B. Oval
 C. Parallelogram D. Arrow
98. The symbol below represents a _____

 A. Decision symbol B. Processing symbol
 C. Manual input D. Paper tape
99. The instructional manual for installing a new software to the computer is a type of _____ solving framework
 A. Algorithm B. Heuristic
 C. Means-end-analysis D. Trial-and-error
100. Complex algorithms are not necessarily in sequence
 A. True B. False
101. In the graphical solution of a tower of Hanoi paradigm, which of the following denotes the distribution of the disks?
 A. Node B. Edges
 C. Both nodes and edges
102. Which of the following is not amongst the control structures in pseudocode
 A. Storage B. Transfer of control
 C. Repetition D. Condition
 E. None of the above
103. _____ are regarded as false codes
 A. Pseudocodes B. Flowcharts
 C. Algorithms D. Symbols
104. Which of the following recognizes that a puzzle can be broken down into a series of sub-problems to each of which the same general procedures applies?
 A. Iteration B. Recursion
 C. Non-recursion D. Binary and gray code
 E. Graphical
105. Source code vary by programming languages
 A. Yes B. No
106. The following below represent a _____

 A. Document symbol
 B. Multiple document symbol
 C. Tape data
 D. Flow of algorithm
107. The minimal number of moves required to solve a tower of Hanoi puzzle is _____
 A. $M = 2^n$ B. $M = 2^n + 1$
 C. $M = 2^n - 1$ D. $M = n^2 - 1$
108. _____ is a fixed set(s) of sample input(s) to test an algorithm
 A. Testing B. Test case(s)
 C. Test suites D. Program testing
109. Connector is represented by _____ in flowchart?
 A. Oval B. Circle
 C. Arrow D. Rectangle
110. Even though pseudocodes differ by persons, there are certain _____ that appears in standard pseudocodes
 A. Standards B. Rules
 C. Laws D. Control structures
111. How are symbols connected together in a flowchart?
 A. Circle B. Oval
 C. Arrows D. Diamond

112. Best datatype for representing an average is
A. Real B. Integer
C. Float D. String
113. To find bugs, a programmer should run the program with many _____
A. Test cases B. Test bugs
C. Testers D. Test clock
114. Finding and fixing errors in a program is called _____
A. Debugging
B. Error-fixation
C. Program verification
D. Deprogramming
115. Tower of Hanoi can be modeled as a word-problem
A. True B. False
116. _____ is the process of telling the computer to execute the compiled instruction
A. Running a program
B. Program command
C. Program simulation
117. A collection of test cases is called _____ A.
Test catalogues B. Test suite
C. Test lists D. Testers
118. A software built into the computer chip when it is made is known as _____
A. Firmware B. Fireware
C. Hardware D. System software
119. Which of the ways cannot be used to approach the tower of Hanoi and its related problem?
A. Iterative solution
B. Non-recursive solution
C. Non-iterative solution
D. Recursive solution
E. Graphical representation
120. Debugging is a time-consuming chore being a programmer
A. True B. False
121. In solving a problem using computational approaches, which of the following should be met?
A. Problem should be clearly defined
B. Problem should be computable
- C. The problem should be able to be approached using the decomposition and abstraction methods
D. All of the above
122. Which of the following is regarded as a computerized problem solving approach that lacks sophistication?
A. Dynamic programming approach
B. Brute force approach
C. Divide-and-conquer approach
D. Randomized approach
123. Which of the approaches takes the most obvious and direct routes without attempting to minimize the number of operations?
A. Dynamic programming approach
B. Brute force approach
C. Randomized approach
D. Divide-and-conquer approach
124. Pseudocodes are easily and widely used than flowcharts
A. True B. False
125. All problems that uses recursion can use dynamic approach
A. True B. False
126. All writers' pseudo codes are the same
A. True B. False
127. Which of the following is only justified when there is some degree of overlapping in the sub-problems?
A. Brute force approach
B. Divide-and-conquer
C. Dynamic programming
D. Greedy algorithm
128. Which of the following is mostly used to solve optimization problems?
A. Brute force approach
B. Divide-and-conquer
C. Dynamic programming
D. Greedy algorithm
129. Optimization has a goal to find the _____ cost.
A. Least B. Highest
C. Medium D. Any of them

130. _____ is widely used in computer and information security as well as computer-based game
- Brute force approach
 - Randomized approach
 - Dynamic programming
 - Greedy algorithm
131. All recursions can reach solution whether or not the sub-problems have overlapping
- True
 - False
132. Optimization makes use of the optimal cost
- True
 - False
133. Which approach is more suitable for game theoretic situations (where fairness of mutual suspicion is ensured)
- Brute force approach
 - Randomized approach
 - Dynamic programming
 - Greedy algorithm
134. Is it a good idea to have others (programmers) test your program for you?
- Yes
 - No
135. Which approach entails the use of results gotten from smaller sub-problems to be reused in calculation of larger sub-problems?
- Brute force approach
 - Divide-and-conquer
 - Dynamic programming
 - Greedy algorithm
136. All dynamic problems use recursion, but not all recursion uses dynamic.
- True
 - False
137. The Fibonacci sequence is an example of _____ approach
- Brute force approach
 - Divide-and-conquer
 - Dynamic programming
 - Greedy algorithm
138. Pseudocodes differs according to writer
- True
 - False
139. Which of the following employs the smallest immediate (local) cost without attempt to check if it is part of the global solution
- Brute force approach
 - Divide-and-conquer
 - Dynamic programming
 - Greedy algorithm
140. Which of the following will produce globally optimal results/solutions in general optimization?
- Brute force approach
 - Randomized approach
 - Dynamic programming
 - Greedy algorithm
141. Which of the following will NOT produce globally optimal results/solutions in general optimization?
- Brute force approach
 - Randomized approach
 - Dynamic programming
 - Greedy algorithm
142. If a solution is said to be locally optimal, it means that it is optimal to some small portion of the total information available about a problem
- True
 - False
143. To repeat a task number of times we use
- Selection
 - Iterations
 - Sequence
 - Recursion
144. TRUE is a _____?
- Boolean
 - Integer
 - Real
 - String
145. The input to larger sub-problems is
- outputs from base cases
 - inputs from base cases
 - overall inputs and outputs
 - none of the above
146. The dynamic programming approaching is a _____ fashion
- Top-down
 - Bottom-top
 - Left-right
 - Right-left
147. Greedy and dynamic programming approaches can be used for optimization problems
- True
 - False
148. _____ are errors in a program that causes it to stop working or produce incorrect/undesirable results
- Errors
 - Bugs
 - Debugs
 - Mistakes

149. The underlying idea of solving a problem using a certain computational problem solving approach is to avoid calculating the same result twice. Which approach is that?
A. Brute force approach
B. Randomized approach
C. Dynamic programming
D. Greedy algorithm
150. In the divide-and-conquer approach, solutions to smaller program propagates from _____ until they solve the original problem
A. Bottom up B. Top down
C. Left-right D. Right-left
151. Which of the following takes very less time to write/design than the other
A. Pseudocode B. Flowchart
152. _____ is defined as the process of identifying the general characteristics needed to solve a program and while filtering out unnecessary information.
A. Abstraction B. Decomposition
C. Recursion D. Hiding
153. _____ approach does not depend only on input data, but also on the values provided by a random number generator
A. Brute force approach
B. Randomized approach
C. Dynamic programming
D. Greedy algorithm
154. The ideas formed from abstraction are regarded as models
A. True B. False
155. A metropolitan public transport map is an example of _____
A. Data abstraction
B. Representational abstraction
C. Procedural abstraction
D. Functional abstraction
156. _____ is defined as the creation of well-defined interfaces to hide the inner workings of computer programs from users
A. Abstraction B. Decomposition
C. Recursion D. Hiding

157. Which of the following utilizes memory caches more?
A. Brute force approach
B. Divide-and-conquer
C. Dynamic programming
D. Greedy algorithm
158. If a problem entails choosing from many alternatives and it is difficult to determine the optimal choice, then _____ approach is more efficiently used
A. Brute force approach
B. Randomized approach
C. Dynamic programming
D. Greedy algorithm
159. Which of the following approach suits parallel execution more?
A. Brute force approach
B. Divide-and-conquer
C. Dynamic programming
D. Greedy algorithm
160. _____ helps to avoid being bugged down with syntax error
A. Flowchart B. Heuristic
C. Pseudocode D. Algorithm
161. _____ is usually used to simplify things that tend to be very complex
A. Decomposition
B. Data hiding
C. Modularization
D. Abstraction
E. A and D
162. _____ can be thought of as a black box
A. Functional abstraction
B. Procedural abstraction
C. Representational abstraction
D. Abstraction by generalization
163. In which of the following is an object used to define different type/classes of a particular thing?
A. Functional abstraction
B. Procedural abstraction
C. Representational abstraction
D. Abstraction by generalization

164. LIFO data structure supports _____ standards of operation
A. 2 B. 3
C. 4 D. 5
165. _____ is used to add an item from a stack
A. Push B. Pop
C. Peek D. Peep
166. _____ is used to view items from the top of a stack
A. Push B. Pop
C. Peek D. Peep
167. In _____ one can define some objects as kinds of generic objects
A. Functional abstraction
B. Procedural abstraction
C. Representational abstraction
D. Abstraction by generalization
168. Algorithms can be all of these except
A. Linear B. Exponential
C. Hyperbolic D. Logarithmic
E. Quadratic
169. _____ type of abstraction is fundamental in object oriented programming (OOP)
A. Abstraction by generalization
B. Procedural abstraction
C. Representational abstraction
D. Functional abstraction
170. _____ is used to implement the divide-and-conquer algorithm
A. Recursion B. Iteration
C. Non-recursion D. None of the above
171. Computer hardware seen as black boxes that hides the complexity of each component is an example to explain the concept of _____
A. Abstraction B. Decomposition
C. Recursion D. Hiding
172. Algorithms are not written in human-readable languages
A. True B. False
173. Different algorithms may be applied to solve a particular problem
A. False B. True

174. Two common methods for representing an algorithm are _____ and _____
A. Abstraction and modularization
B. Pseudocode and flowcharts
C. Decomposition and control structuring
175. When a sub-algorithm comes back with some kind of object or value such as numerical result, the call the sub-algorithm _____
A. Procedure B. Function
C. Module D. Routine
176. Which of the following is not a characteristic of an algorithm?
A. Finiteness B. Uniqueness
C. Precision D. Output
E. None of the above
177. To identify a sub-algorithm, _____ is used
A. Parenthesis B. Brackets
C. Hyphens D. Punctuations
178. In naming a function/procedure, which of the following is not a standard
A. Use spaces or punctuations
B. Do not use spaces or punctuations
C. First character should be in lower case
D. All of the above
179. When a sub-algorithm doesn't comes back with some kind of object or value such as numerical result, the sub-algorithm is a
A. Procedure B. Function
C. Module D. Routine
180. Parameters are sometimes called _____
A. Additional information
B. Procedures
C. Function
D. Modules
181. Parameters are supplied in-between _____ of a function or parameter
A. Bracket B. Curled bracket
C. Parenthesis D. Quotation marks
182. Unsigned integers are conceptually _____
A. Simple B. Difficult
C. Complex D. Bulky
183. _____ is regarded as an effective step-by-step procedures for solving a problem in a finite number of steps

- A. Heuristics
 B. Algorithms
 C. Mean-end-analysis
 D. Recursion
184. The implementation of an abstraction process is revealed at the _____
 A. Lowest level B. High level
 C. Medium level D. Any level
185. _____ abstraction technique uses subroutines
 A. Functional abstraction
 B. Procedural abstraction
 C. Representational abstraction
 D. Abstraction by generalization
186. LIFO mean _____
 A. Last-in-first-out
 B. Last-interface-first-out
 C. Last-in-first-off
187. A program to evaluate the surface area of a chopping board utilizes _____
 A. Functional abstraction
 B. Procedural abstraction
 C. Representational abstraction
 D. Abstraction by generalization
188. In the main constructs of pseudocodes, which of the following is regarded as a loop with a condition at the beginning?
 A. WHILE B. REPEAT-UNTIL
 C. FOR D. IF-THEN-ELSE
189. In pseudocode, one should use the naming domain of the problem and not that of the implementation
 A. True B. False
190. _____ is regarded as a powerful implementation technique where a function calls itself on a smaller problem of the same type in order to simplify the problem to a solvable state
 A. Recursion B. Decomposition
 C. Abstraction D. Iteration
191. _____ can be used to store information about a function
 A. Frame B. Memory
 C. RAM D. ROM
192. The memory set aside to store local variables whenever a recursive call is made is _____
 A. Frame B. Memory
 C. RAM D. ROM
193. _____ is a small portion of the problem that we know how to solve
 A. Recursive case B. Base case
 C. Test case D. All of the above
194. Invoking classes or calling functions use _____ constructs
 A. INVOKE B. CALL
 C. WHEN D. CASE
195. _____ is a good middle point between a flowchart and the main code
 A. Parameter B. Pseudocode
 C. Flowchart D. Algorithm
196. _____ makes it possible for a program to return to the proper place after a function call.
 A. Frame B. Memory
 C. RAM D. ROM
197. Pseudocodes can be compiled and interpreted by the computer
 A. True B. False
198. _____ can be used to store a function's address
 A. Frame B. Memory
 C. RAM D. ROM
199. _____ is regarded as a piece of data provided as input to a function or procedure
 A. Input function B. Input procedure
 C. Parameter D. All of the above
200. The factorial ($n!$) notation is an example of _____ recursion
 A. Linear B. Mutual
 C. Factorial D. Exponential
201. Each time a recursive call is made, a new copy of the local variable is produced
 A. True B. False
202. As functions get more and more complex, problems with ambiguous mission statements becomes more _____
 A. Apparent B. Useless
 C. Needful D. Okay

203. Multiple frames are stored in the _____
A. Stack B. Frame bank
C. Stock D. Frame memory
204. _____ holds information of currently running functions
A. Stack B. Frame
C. Memory D. Function
205. An example of hierarchy is a business organization chart of employees and employer
A. True B. False
206. _____ is the more general problem one is trying to solve
A. Base case B. Recursive case
C. Test case D. None of the above
207. If one recursive call is made at a time, the type of recursion is _____
A. Binary recursion B. Exponential recursion
C. Mutual recursion D. Linear recursion
208. Recursive process is said to end at the
A. Base case B. Recursive case
C. Test case D. None of the above
209. A stack utilizes _____ data structure
A. LIFO B. FIFO
C. FILO D. FUFU
210. The *main()* function is located at the _____ of a stack
A. Top B. Bottom
C. Middle D. Anywhere
211. The function at the _____ of a frame is regarded as the *active function*
A. Top B. Bottom
C. Middle D. Anywhere
212. As far as computer is concerned, a recursive call is just like any other call
A. True B. False
213. A program is said to be finished when there is no more function after the _____
A. ***main()*
B. First stack
C. Middle stack
D. All of the above
214. In computer science, we are concerned with algorithms that are time and space efficient
A. True B. False
215. Every recursive function must have at least _____ cases
A. One B. Two
C. Three D. Four
216. Which of the following is not a type of recursion?
A. Tail recursion
B. Head recursion
C. Nested recursion
D. Linear recursion
217. Every function has _____ that is created when the function is called
A. Its own frame
B. Two frame
C. Infinite frames
D. All of the above
218. In measuring the efficiency of an algorithm, which of the following is the most important factor?
A. Reliability
B. Accuracy
C. Time of execution
D. Ease of modification
219. Which of the following is not a standard in writing algorithms?
A. Always capitalize initial word
B. Indent to show hierarchy
C. Have one statement per line
D. Keep your statement programming language-dependent
220. Pseudocode constructs should be used as a variable name
A. True B. False
221. Indentations in pseudocodes show hierarchy and improve readability
A. True B. False
222. A stack is an ADT. What does ADT mean?
A. Abstract Data Type
B. Automatic Data Type
C. Abstract Data Technique

223. In the main constructs of pseudocodes, which of the following is regarded as a loop with a condition at the bottom?
- A. WHILE B. REPEAT-UNTIL
C. FOR D. IF-THEN-ELSE
224. _____ allows us to create a general idea of what a problem is and how to solve it
- A. Abstraction B. Decomposition
C. Recursion D. Hiding
225. In the main constructs of pseudocodes, _____ is used in handling exceptions
- A. CALL B. WHEN
C. FOR D. IF-THEN-ELSE
226. In the main constructs of pseudocodes, _____ construct is a generalization form of *IF-THEN-ELSE*?
- A. SEQUENCE B. CALL
C. REPEAT-UNTIL D. CASE
227. In coding, programmers include _____ as *docstrings*
- A. Pseudocodes B. Algorithms
C. Flowcharts D. No answer
228. _____ allows program codes to be shared amongst objects
- A. Functional abstraction
B. Procedural abstraction
C. Representational abstraction
D. Abstraction by generalization
229. _____ can act as a good start point for the documentation of an algorithmic process
- A. Flowchart B. Legend
C. Pseudocode D. Code
230. Algorithms should be tested by manually going through the steps (mentally) to make sure a step or a special situation is not left out
- A. True B. False
231. A source code is simply the _____
- A. The source code itself
B. All of the options
C. The bugged code
D. The programmer

232. Good algorithms should be written with
- A. Ambiguity
B. No ambiguity
C. No clarity
D. All of the above
233. Only when one is convinced that the algorithm will solve a given problem should the next step be attempted
- A. True B. False
234. Which of the following step is implemented by specifying the base case
- A. Divide B. Conquer
C. Combine D. All of the above
235. Which of the following fits more easily on a sheet of paper?
- A. Pseudocodes B. Algorithms
C. Flowcharts D. No answer
236. _____ enables us to form our own idea of a problem
- A. Abstraction B. Decomposition
C. Recursion D. Hiding
237. When the sub-problems become divided that it can't be divided further again, we say the recursion _____
- A. Bottoms out B. Bottoms up
C. Tops up D. Tops down
238. A sub-problem is said to be solved if it has arrived at the _____
- A. Bare minimum B. Base case
C. Bottomed out D. All of the above
239. Merge-sort and quick-sort algorithms are examples of _____ approach
- A. Divide-and-conquer
B. Dynamic programming
C. Brute force
D. Greedy approach
240. Compiling is the process of converting a program into instructions that can be understood by the computer.
- A. True B. False

241. Absence of semicolon [;] in some codes can generate a problem called
A. Syntax error
B. Compile-time error
C. Logic error
D. General error
242. Repeating something a fixed number of times until some conditions occur _____
A. For loops B. While loops
C. Repeat loops D. For statements
243. The best datatype for a counter is _____
A. Int B. Char
C. String D. Boolean
244. In algorithmic parlance, a graph is regarded as _____
A. A chart showing the relationship between two or more variables
B. A chart showing the hierarchies, networks of things, people, places and how they are functionally related
C. Both options A and B
245. Whenever the issue of circularity arise
A. The base case is never reached
B. The base case reaches in long time
C. Recursive case is never reach
D. All of the above
246. The flow of a flowchart always goes on the direction of _____
A. Left-right and top-bottom
B. Left-right and bottom-top
C. Right-left and bottom-top
D. Right-left and top-bottom
247. Writing a program is often called _____ (choose two)
A. Typewriting
B. Coding
C. Implementing an algorithm
D. Typesetting
248. _____ is regarded as the most visually appealing representation of an algorithm
A. Pseudocode
B. Flowchart
C. Algorithm
249. _____ flowchart comes handy when one needs to show multiple flows of information side by side
A. Swimlane B. Process flow chart
C. Data flowchart D. Workflow chart
250. _____ are regarded as simple and concise sequence of English-like instructions to solve a problem
A. Flowcharts B. Pseudocodes
C. Algorithm D. Step-by-step
251. Flowcharts are easily and widely used than pseudocodes
A. True B. False
252. _____ is a problem that occurs when the arguments to a function is the same to the previous function call in the stack
A. Circularity
B. Repetitive error
C. Both
253. _____ can be written/designed in such a way that it is very close to the real program code
A. Algorithm B. Pseudocode
C. Flowchart D. Coding
254. Testing at service boundary of codes of also termed _____
A. Unit test
B. Integration test
C. Functional test
D. End-to-end test
255. A software built into the computer chip when it is made is known as _____
A. Firmware
B. Fireware
C. Hardware
D. System software

ANSWERS [001 – 100]

1.	B	21.	B	41.	B	61.	B	81.	A
2.	D	22.	A	42.	B	62.	A	82.	A
3.	B	23.	A	43.	A	63.	C	83.	B
4.	D	24.	A	44.	B	64.	B	84.	A
5.	B	25.	A	45.	B	65.	A	85.	A
6.	B	26.	B	46.	D	66.	A	86.	A
7.	C	27.	C	47.	C	67.	D	87.	B
8.	C	28.	B	48.	B	68.	D	88.	C
9.	A	29.	C	49.	A	69.	E	89.	A
10.	A	30.	C	50.	A	70.	C	90.	A
11.	C	31.	B	51.	C	71.	A	91.	A
12.	A	32.	A	52.	B	72.	B	92.	E
13.	A	33.	A	53.	A	73.	B	93.	A
14.	C	34.	D	54.	B	74.	A	94.	B
15.	D	35.	A	55.	C	75.	B	95.	A
16.	B	36.	A	56.	C	76.	A	96.	B
17.	D	37.	A	57.	A	77.	A	97.	C
18.	C	38.	C	58.	B	78.	B	98.	B
19.	B	39.	E	59.	C	79.	A	99.	A
20.	A	40.	B	60.	A	80.	A	100.	A

ANSWERS [101 – 200]

101.	A	121.	D	141.	D	161.	E	181.	C
102.	E	122.	B	142.	A	162.	A	182.	A
103.	A	123.	B	143.	B	163.	D	183.	B
104.	B	124.	A	144.	A	164.	B	184.	A
105.	A	125.	B	145.	A	165.	A	185.	B
106.	A	126.	B	146.	B	166.	C	186.	A
107.	C	127.	C	147.	A	167.	D	187.	B
108.	B	128.	C	148.	B	168.	C	188.	A
109.	B	129.	A	149.	C	169.	A	189.	A
110.	D	130.	B	150.	A	170.	A	190.	A
111.	A	131.	A	151.	A	171.	A	191.	A
112.	C	132.	A	152.	A	172.	B	192.	A
113.	A	133.	B	153.	B	173.	B	193.	B
114.	A	134.	A	154.	A	174.	B	194.	B
115.	A	135.	C	155.	B	175.	B	195.	B
116.	A	136.	A	156.	A	176.	E	196.	A
117.	B	137.	C	157.	B	177.	A	197.	B
118.	A	138.	B	158.	B	178.	A	198.	A
119.	C	139.	D	159.	B	179.	A	199.	C
120.	A	140.	C	160.	C	180.	A	200.	A

ANSWERS [201 - 255]

201.	A	211.	A	221.	A	231.	A	241.	B	251.	B
202.	A	212.	A	222.	A	232.	B	242.	A	252.	A
203.	A	213.	A	223.	B	233.	A	243.	A	253.	B
204.	A	214.	A	224.	A	234.	B	244.	B	254.	B
205.	A	215.	B	225.	B	235.	A	245.	A	255.	A
206.	B	216.	B	226.	D	236.	A	246.	A	256.	
207.	D	217.	A	227.	A	237.	A	247.	B & C	257.	
208.	A	218.	C	228.	D	238.	B	248.	B	258.	
209.	A	219.	D	229.	C	239.	A	249.	A	259.	
210.	B	220.	B	230.	A	240.	B	250.	B	260.	

