

# QB365 Question Bank Software Study Materials

## Algorithmic Strategies 50 Important 1 Marks Questions With Answers (Book Back and Creative)

12th Standard

Computer Science

Total Marks : 50

### Multiple Choice Question

50 x 1 = 50

- 1) The word comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khwarizmi is called?  
(a) Flowchart (b) Flow **(c) Algorithm** (d) Syntax
- 2) From the following sorting algorithms which algorithm needs the minimum number of swaps?  
(a) Bubble sort (b) Insertion sort **(c) Selection sort** (d) All the above
- 3) Two main measures for the efficiency of an algorithm are  
(a) Processor and memory (b) Complexity and capacity **(c) Time and space** (d) Data and space
- 4) The  $\Theta$  notation in asymptotic evaluation represents  
(a) Base case **(b) Average case** (c) Worst case (d) NULL case
- 5) If a problem can be broken into subproblems which are reused several times, the problem possesses which property?  
**(a) Overlapping subproblems** (b) Optimal substructure (c) Memoization (d) Greedy
- 6) In dynamic programming, the technique of storing the previously calculated values is called ?  
(a) Saving value property (b) Storing value property **(c) Memoization** (d) Mapping
- 7) Big  $\Omega$  is the reverse of  
**(a) Big O** (b) Big  $\theta$  (c) Big A (d) Big S
- 8) The algorithm that yields expected output for a valid input is called as  
**(a) Algorithmic Solution** (b) Algorithmic outcomes (c) Algorithmic problem (d) Algorithmic coding
- 9) Which of the following is used to describe the worse case of an algorithm?  
(a) Big A (b) Big S (c) Big W **(d) Big O**
- 10) Binary search is also called as  
(a) Linear search (b) Sequential search (c) Random Search **(d) Half - interval search**
- 11) The complexity of linear search algorithm is  
**(a)  $O(n)$**  (b)  $O(\log n)$  (c)  $O(n^2)$  (d)  $O(n \log n)$
- 12) From the following sorting algorithms which has the lowest worst case complexity?  
(a) Bubble sort (b) Quick sort **(c) Merge sort** (d) Selection sort
- 13) Which of the following is not a stable sorting algorithm?  
(a) Insertion sort (b) Quick sort (c) Merge sort **(d) Selection sort**
- 14) Which of the following is an example of data structures?  
(a) List (b) Tuple (c) Dictionary **(d) All of these.**
- 15) Which of the following is not a sorting technique?

- (a) Bubble    **(b) Binary**    (c) Insertion    (d) Quick
- 16) Performance measurement of an algorithm is called  
**(a) Posteriori testing**    (b) Priori estimates    (c) Efficiency testing    (d) Algorithmic analysis
- 17) Efficiency of an algorithm decided by  
**(a) Time, Space**    (b) Definiteness, portability    (c) Priori, Postriori    (d) Input/output
- 18) The amount of memory required to run an algorithm completion is known by  
(a) Efficiency of an algorithm    (b) Performance analysis of an algorithm    (c) Space complexity of an algorithm  
**(d) Time complexity of an algorithm**
- 19) Which of the following component is defined as the total space required to store certain data and variables for an algorithm?  
(a) Time part    (b) Variable part    **(c) Fixed part**    (d) Memory part
- 20) Which of the following component is defined as the total space required by variables, which sizes depends on the problem and its iteration?  
**(a) Variable part**    (b) Time part    (c) Fixed part
- 21) Time and Space complexity could be considered for an  
(a) Algorithmic strategy    (b) Algorithmic analysis    (c) Algorithmic solution    **(d) Algorithmic efficiency**
- 22)  $O(1)$  is an example of  
**(a) best case**    (b) worst case.    (c) Average case    (d) Null casd
- 23) Binary search also called  
(a) Sequential search    **(b) Half-interval search**    (c) Unordered search    (d) Full-interval search
- 24) Which sorting algorithm sort is by making only one exchange for every pass through the list?  
(a) Bubble    **(b) Selection**    (c) Comparison    (d) Merge
- 25) In which programming the solutions of overlapped sub-problems are combined in order to get the better solution?  
(a) Object oriented    (b) Procedural    **(c) Dynamic**    (d) Modular
- 26) Which approach is similar to divide and conquer method?  
**(a) Dynamic programming**    (b) Object oriented    (c) Procedural    (d) Modular
- 27) \_\_\_\_\_ is a step-by-step procedure for solving a given problem  
**(a) Algorithm**    (b) Program    (c) Statements    (d) Structure
- 28) Each of algorithm steps and there inputs! outputs should be clear and must lead to only one meaning refers to the algorithm characteristics \_\_\_\_\_.  
**(a) Unambiguous**    (b) Feasibility    (c) Independent    (d) Effectiveness
- 29) Algorithm resembles a \_\_\_\_\_ which can be implemented in any programming language.  
(a) Solution    (b) Program    **(c) Pseudocode**    (d) Function
- 30) Performance evaluation of an algorithm can be\_\_\_\_\_ divided into different phases  
(a) 3    **(b) 4**    (c) 4    (d) 1
- 31) Recursion used to calculate factorial of a given value n in algorithm is an example of\_\_\_\_\_ component  
(a) Fixed part    **(b) Variable part**    (c) Operator part    (d) Time part

- 32) Simple variables and constants used in an algorithm is an example of \_\_\_\_\_ component.  
 (a) Time part (b) Variable part (c) Factor part **(d) Fixed part**
- 33) The \_\_\_\_\_ of an algorithm is defined as the number of computational resources used by the algorithm.  
 (a) Simplicity **(b) Efficiency** (c) Feasibility (d) Potable
- 34) \_\_\_\_\_ is used to describe the lower bound of asymptotic function.  
 (a) Big Alpha (b) Big Beta (c) Big O **(d) Big Omega**
- 35) Which of the following is the reverse of Big O?  
**(a) Big  $\Omega$**  (b) Big  $\mu$  (c) Big symbol (d) Big O
- 36) How data are maintained effectively?  
 (a) Program (b) Algorithm (c) Flow chart **(d) Data structure**
- 37) How the algorithm can be categorized?  
 (a) Implementation (b) Methods (c) Design techniques **(d) All the above**
- 38) A fixed part contains \_\_\_\_\_.  
 (a) Simple variables (b) Simple constant **(c) Simple variables & constants** (d) Recursion of 'n'
- 39) The efficiency of an algorithm can be measured based on the \_\_\_\_\_.  
 (a) Size of the i/p data **(b) Usage of different resources** (c) Number of key operations (d) Memory space required
- 40) The time and space complexity cannot be compared \_\_\_\_\_.  
 (a) Sequentially (b) Randomly (c) Indirectly **(d) Directly**
- 41) Match the following
- |                       |                            |
|-----------------------|----------------------------|
| 1) Running Time       | Performance analysis       |
| 2) Priori estimate    | Instruction executed       |
| 3) Posteriori testing | Estimation of time & space |
| 4) Algorithm analysis | Performance measurement    |
- (a) 4-3-2-1 (b) 1-2-3-4 **(c) 2-1-4-3** (d) 3-4-2-1
- 42) Choose the correct pair:  
 (a) Big O - upper bound (b) Big  $\Omega$  - lower bound (c) Big  $\mu$  - lower bound = upper bound **(d) All the above**
- 43) If the search value is greater than the middle value, then change the \_\_\_\_\_.  
**(a) Low to mid + 1** (b) High to mid - 1 (c) Low to mid - 1 (d) High to mid + 1
- 44) If the search value is lower than the middle value then change the \_\_\_\_\_.  
 (a) Low to mid + 1 **(b) High to mid - 1** (c) Low to mid + 1 (d) High to mid + 1
- 45) The insertion sort algorithm gives the sorted output in order.  
**(a) Ascending** (b) Descending (c) Shuffle (d) Same
- 46) \_\_\_\_\_ approaches are used to find the solutions in optimized way.  
 (a) Assembly language Programming (b) High level Programming (c) Low level Programming  
**(d) Dynamic Programming**
- 47) Dynamic algorithm uses \_\_\_\_\_.  
 (a) Memorization (b) Overlapping (c) Divide and conquer **(d) All the above**

48) Step by Step procedure for solving a given problem.

(a) Program (b) Pseudo Code (c) Flowchart **(d) Algorithm**

49) A way of designing algorithm is called \_\_\_\_\_.

(a) Algorithm analysis (b) Algorithmic solution **(c) Algorithm strategy** (d) None of the above

50) Choose the odd man out:

(a) Binary Search (b) Half-interval search (c) Divide -and conquer algorithm **(d) Linear Search**