

CUET 2026 May 31 Shift 1 Computer Science

Question Paper (Memory-Based) With Solution

Conducted by National Testing Agency (NTA)



General Instructions

- (i) The examination will be conducted in Computer-Based Test (CBT) mode.
- (ii) Each question carries +5 marks for correct answer and -1 mark for wrong answer.
- (iii) The total number of questions are 50.
- (iv) Duration of the exam is 1 hour (60 minutes).

1. Which switching technique is used in the Internet?

- (A) Circuit Switching
- (B) Packet Switching
- (C) Message Switching
- (D) Hybrid Switching

Correct Answer: (B) Packet Switching

Solution:

Concept:

Packet switching is a communication method in which data is divided into small packets before transmission. Each packet may travel through different routes and is reassembled at the destination.

Step 1: Understand Internet communication

The Internet does not establish a dedicated communication path between sender and receiver. Instead, data is broken into packets.

Step 2: Identify the switching technique

Since data travels in the form of packets through various network routes, the Internet uses packet switching.

Final Answer:

Packet Switching

Quick Tip: The Internet is the most common example of a packet-switched network.

2. Telephone conversation is an example of:

- (A) Simplex
- (B) Half Duplex
- (C) Full Duplex
- (D) Multiplex

Correct Answer: (C) Full Duplex

Solution:

Concept:

Communication modes describe the direction of data flow between devices.

- Simplex: One-way communication only.
- Half Duplex: Both directions, but one at a time.
- Full Duplex: Both directions simultaneously.

Step 1: Analyze telephone communication

During a telephone call, both persons can speak and listen at the same time.

Step 2: Identify the communication mode

Since communication occurs simultaneously in both directions, it is a full duplex system.

Final Answer:

Full Duplex

Quick Tip: Mobile phones and landline telephones are examples of full duplex communication.

3. Linear search works best on:

- (A) Sorted list
- (B) Unsorted list
- (C) Binary tree
- (D) Hash table

Correct Answer: (B) Unsorted list

Solution:

Concept:

Linear search checks each element one by one until the desired item is found.

Step 1: Understand linear search

In linear search, elements are examined sequentially from the beginning to the end of the list.

Step 2: Determine where it is useful

Linear search does not require the data to be sorted. Therefore, it is most useful for unsorted lists.

Final Answer:

Unsorted List

Quick Tip: Linear search can work on both sorted and unsorted data, but it is especially useful when data is unsorted.

4. Which search method has logarithmic complexity?

- (A) Linear Search
- (B) Binary Search
- (C) Sequential Search
- (D) Traversal

Correct Answer: (B) Binary Search

Solution:**Concept:**

Time complexity measures the number of operations required by an algorithm as the size of input increases.

Step 1: Recall complexities

$$\text{Linear Search} = O(n)$$

$$\text{Binary Search} = O(\log n)$$

Step 2: Identify logarithmic search

Binary search repeatedly divides the search space into two halves, reducing the number of comparisons significantly.

Final Answer:

Binary Search

Quick Tip: Binary Search requires the data to be sorted before searching.

5. Who developed Python programming language?

- (A) Dennis Ritchie
- (B) James Gosling
- (C) Guido van Rossum
- (D) Bjarne Stroustrup

Correct Answer: (C) Guido van Rossum

Solution:**Concept:**

Python is a high-level, interpreted, and general-purpose programming language.

Step 1: Recall the creator of Python

Python was developed by Guido van Rossum in the late 1980s and was officially released in 1991.

Step 2: Compare with other options

- Dennis Ritchie developed C.
- James Gosling developed Java.
- Bjarne Stroustrup developed C++.

Therefore, Python was developed by Guido van Rossum.

Final Answer:

Guido van Rossum

Quick Tip: Python was named after the comedy series "Monty Python's Flying Circus," not after the snake.

6. Which keyword is used to define a function in Python?

- (A) function
- (B) define
- (C) def
- (D) fun

Correct Answer: (C) def

Solution:

Concept:

A function is a reusable block of code that performs a specific task. In Python, functions are created using the def keyword.

Step 1: Recall the syntax for function definition

General syntax:

```
def function_name():
```

Example:

```
def add(a, b):  
    return a + b
```

Step 2: Identify the correct keyword

Python uses the keyword `def` to define a function.

Final Answer:

def

Quick Tip: Every user-defined function in Python begins with the keyword `def`.

7. Which operator is used for logical AND in Python?

- (A) &
- (B) and
- (C)
- (D) AND

Correct Answer: (B) and

Solution:

Concept:

Logical operators are used to combine conditional expressions.

Step 1: Recall Python logical operators

Python provides:

and, or, not

Step 2: Identify the AND operator

The logical AND operator returns True only when both conditions are True.

Example:

```
x = 10
```

$y = 20$

$x > 5$ and $y > 15$

The expression evaluates to True.

Final Answer:

and

Quick Tip: Python uses words (and, or, not) instead of symbols such as && used in some other languages.

8. Which one of the following is the formula used to calculate the middle index in Binary Search?

- (A) $\frac{low+high}{2}$
(B) $low + high$
(C) $high - low$
(D) $\frac{high-low}{2}$

Correct Answer: (A) $\frac{low+high}{2}$

Solution:

Concept:

Binary Search repeatedly divides a sorted list into two halves and checks the middle element.

Step 1: Understand Binary Search

To locate an element efficiently, Binary Search first finds the middle position of the current search range.

Step 2: Apply middle index formula

The middle index is calculated as:

$$mid = \frac{low + high}{2}$$

where:

low = starting index

$high$ = ending index

Final Answer:

$$\frac{low + high}{2}$$

Quick Tip: Modern implementations often use $low + \frac{high - low}{2}$ to avoid overflow.

9. Which of the following is NOT an element of communication?

- (A) Sender
- (B) Receiver
- (C) Message
- (D) Compiler

Correct Answer: (D) Compiler

Solution:

Concept:

Communication is the process of exchanging information between individuals or devices.

Step 1: Recall the elements of communication

The basic elements are:

- Sender
- Message
- Medium/Channel
- Receiver
- Feedback

Step 2: Examine the options

Sender, Receiver and Message are communication elements.

A Compiler is a software program that translates source code into machine code and is unrelated to the communication process.

Final Answer:

Compiler

Quick Tip: Compiler is a programming concept, whereas sender, receiver and message belong to communication systems.

10. Linear Search is useful when:

- (A) Data is unsorted
- (B) Dataset is small
- (C) Both A and B
- (D) Data is indexed

Correct Answer: (C) Both A and B

Solution:**Concept:**

Linear Search examines each element one by one until the desired element is found.

Step 1: Consider unsorted data

Linear Search does not require the elements to be arranged in any particular order.

Step 2: Consider small datasets

For a small number of records, Linear Search is simple to implement and performs efficiently.

Step 3: Choose the most appropriate option

Since Linear Search is suitable for both unsorted data and small datasets, the correct answer is:

Both A and B

Final Answer:

Both A and B

Quick Tip: Linear Search is simple but becomes inefficient for very large datasets because its time complexity is $O(n)$.