



Futurense.uni
Admissions and Industry Partner

Sample Question Paper

AINPT-IITGN

All India National Proficiency Test - IIT Gandhinagar CDF





Test Pattern

Section	Topics / Problem Style	No. of Questions	Duration	Total Marks
Quantitative Reasoning	Mathematical aptitude, Problem-solving, Basic probability & statistics	7 MCQs	15 mins	7
Programming Fundamentals	Core programming concepts (language-agnostic), Basic syntax understanding	8 MCQs	15 mins	8
Technical Reasoning	Algorithmic thinking, Data structures concepts, Problem decomposition	7 MCQs	15 mins	7
Data Interpretation + Logical & Analytical Reasoning	Reading charts/graphs, Drawing insights, Basic data literacy, Pattern recognition, Critical thinking, Analytical problem-solving	8 MCQs	15 mins	8
Coding & Problem-Solving	Implementation problems testing core logic	4 Coding Problems	60 mins	20
Total		35 Questions	120 Mins	50

Instructions:

- This paper is divided into 5 sections.
- MCQs (Sections 1–4) are worth 1 mark each.
- Coding Problems (Section 5) are worth 5 marks each.
- Fundamental understanding of SQL (preferably MySQL) is required. Knowledge of either Python or Java is required and you can attempt the programming question in either of the two languages.
- Manage your time as per the duration mentioned for each section.



Section 1: Quantitative Reasoning

Questions: 7 Duration: 15 minutes Marks: 7

1. A's salary is 20% lower than B's salary. By what percentage is B's salary higher than A's?

- a) 20%
- b) 22%
- c) 25%
- d) 30%

2. A can complete a piece of work in 12 days, and B can complete the same work in 18 days. If they work together, how long will it take them to complete the work?

- a) 7.2 days
- b) 7.5 days
- c) 8.0 days
- d) 15 days

3. A train traveling at 60 km/h crosses a pole in 9 seconds. What is the length of the train?

- a) 120 meters
- b) 150 meters
- c) 180 meters
- d) 200 meters

4. Two unbiased dice are rolled. What is the probability that the sum of the numbers is a prime number?

- a) 5/12
- b) 15/36
- c) 7/18
- d) 1/2

5. What is the next number in the series: 3, 7, 16, 35, 74, ___?

- a) 153
- b) 148
- c) 158
- d) 162

6. The mean of 5 observations is 15. If three of the observations are 10, 12, and 20, and the other two are in the ratio 2:3, what are the two unknown numbers?

- a) 12, 18
- b) 10, 15
- c) 14, 21
- d) 8, 12



7. In a survey of 100 students, 60 like coffee, 50 like tea, and 20 like both. How many students like neither coffee nor tea?

- a) 0
- b) 10
- c) 20
- d) 30

Section 2: Programming Fundamentals (Language-Agnostic)

Questions: 8 Duration: 15 minutes Marks: 8

8. What is the value of the expression $15 + 10 * 2 \% 3 - 1$ given standard operator precedence?

- a) 16
- b) 14
- c) 11
- d) 17

9. Examine the following code snippet. What is the final value of count?

```
int count = 0;
for (int i = 0; i < 10; i = i + 1) {
    if (i % 2 == 1) {
        continue;
    }
    if (i > 6) {
        break;
    }
    count = count + i;
}
```

- a) 10
- b) 12
- c) 30
- d) 20

10. Consider the following function. What is the output of `print(func(5))`?

```
int x = 10; // Global variable
int func(int n) {
    int x = 5; // Local variable
    return n * x;
}
```

- a) 50
- b) 10
- c) 25
- d) 15



11. An array items is defined as [10, 20, 30, 40, 50]. What is the value of items[items[1] / 10]?

- a) 20
- b) 30
- c) 40
- d) 10

12. How many times will "Hello" be printed?

```
int i = 2;
while (i <= 50) {
    print("Hello");
    i = i * 2;
}
```

- a) 4
- b) 5
- c) 6
- d) 25

13. What is the output of the following pseudocode?

```
string s1 = "hello"
string s2 = "world"
string s3 = s1[0] + s2[1] + s2[2]
print(s3)
```

- a) her
- b) hol
- c) how
- d) hrl

14. Which control flow statement is used to exit the current loop (or switch statement) and transfer control to the statement immediately following it?

- a) continue
- b) break
- c) return
- d) exit

15. If a = true, b = false, and c = true, what is the result of (a AND b) OR (NOT b AND c)?

- a) true
- b) false
- c) Error
- d) Null

Section 3: Technical Reasoning (DSA)

Questions: 7 Duration: 15 minutes Marks: 7

16. A stack follows LIFO. If the following operations are performed: PUSH(A), PUSH(B), PUSH(C), POP(), PUSH(D), PUSH(E), POP() — what will be the 2nd element from the top of the stack?

- a) D
- b) B
- c) A
- d) C

17. You need to implement a system that processes tasks in the order they are received (FIFO). Which data structure is most appropriate?

- a) Stack
- b) Queue
- c) Array
- d) Hash Map

18. What is the main advantage of a Hash Map over an Array for checking if an item exists among 1 million unique items?

- a) It uses less memory.
- b) It maintains sorted order.
- c) It provides faster lookup.
- d) It is easier to implement.

19. You have a large, sorted list of numbers. Which algorithm is most efficient for finding a specific number?

- a) Linear Search
- b) Binary Search
- c) A basic for loop
- d) Recursion

20. What does the following pseudocode function do?

```
FUNCTION check(list)
    left = 0
    right = list.length - 1
    WHILE left < right
        IF list[left] != list[right]
            RETURN false
        END IF
        left = left + 1
        right = right - 1
    END WHILE
    RETURN true
END FUNCTION
```

- a) Sorts the list
- b) Reverses the list
- c) Checks if the list is a palindrome
- d) Finds the middle element

21. In a recursive function, what is the “base case” responsible for?

- a) Calling the function again with different input
- b) Stopping the recursion and preventing infinite loops
- c) Performing the main calculation
- d) Initializing variables

22. In an array of size N, what is the time complexity of inserting a new element at the very beginning?

- a) Very fast, as you just add the element
- b) Very slow, as all N elements must be shifted
- c) It depends on the value inserted
- d) The same speed as inserting at the end

Section 4: Data Interpretation & Logical Reasoning

Questions: 8 Duration: 15 minutes Marks: 8

Use the data below for Questions 23–25:

Quarter	Product X	Product Y	Product Z
Q1	150	100	200
Q2	180	120	190
Q3	170	130	210
Q4	200	150	220

23. Which product had the highest total sales over the year?

- a) Product X
- b) Product Y
- c) Product Z
- d) Both X and Z

24. What was the percentage increase in Product Y sales from Q1 to Q4?

- a) 33.3%
- b) 50%
- c) 150%
- d) 25%



25. What was the average number of units sold per quarter for Product X?

- a) 170
- b) 175
- c) 180
- d) 700

26. Complete the series: Z, X, V, T, R, __, __

- a) P, N
- b) O, M
- c) P, M
- d) Q, O

27. Find the odd one out:

- a) Lion
- b) Tiger
- c) Leopard
- d) Cow

28. Statements:

All P are Q. Some R are P.

Conclusions:

- I. Some R are Q.
- II. All Q are P.

Which of the following is correct?

- a) Only Conclusion I follows
- b) Only Conclusion II follows
- c) Both I and II follow
- d) Neither I nor II follows

29. Five people (A, B, C, D, E) are sitting in a line. A is next to B. C is next to D. E is not next to C. E is sitting on the left end. C is in the second position from the right. Who is sitting next to A?

- a) E and B
- b) C and B
- c) E and D
- d) Only B

30. Analogy: Thermometer is to Temperature as Barometer is to...

- a) Altitude
- b) Pressure
- c) Humidity
- d) Wind Speed



Section 5: Coding & Problem-Solving

Questions: 4 Duration: 60 minutes Marks: 20

31. First Non-Repeating Character

Write a function that takes a string s and returns the first character that appears only once. If none, return null.

Example Inputs/Outputs:

- "leetcode" → "l"
- "loveleetcode" → 'v'
- "aabbc" → null

32. Two Sum (Sorted Array)

Write a function that takes a sorted array and a target integer. Return true if a pair sums to the target, otherwise false.

Example Inputs/Outputs:

- [2, 7, 11, 15], target = 9 → true
- [1, 4, 6, 8], target = 11 → false
- [5, 8, 10, 13], target = 16 → false

33. Valid Parentheses

Write a function that checks if a string containing '()', '{}', '[]' is valid.

Example Inputs/Outputs:

- "()" → true
- "()[]{}" → true
- "[]" → false
- "([])" → false
- "{}[]" → true

34. Department with Highest Average Salary Tables:

Employees

EmployeeID	Name	Salary	DepartmentID
1	Alice	90000	1
2	Bob	85000	2
3	Charlie	92000	1
4	David	78000	2
5	Eve	100000	3



Departments

DepartmentID	DepartmentName
1	Engineering
2	Marketing
3	HR

Write a SQL query to find the department that has the highest average salary.