



Delhi Public School, Howrah

PERIODIC TEST – II (2025-2026)

CLASS – XI

Care must be taken not to write anything on the question paper. All the questions must be attempted in the correct sequence.

SUBJECT: COMPUTER SCIENCE (083)

THEORY EXAMINATION

Time Allowed:- 3 Hours

F.M.-70

General Instructions:

- All questions are compulsory.
- The examination paper contains five sections, from Section A to Section E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 4 questions (29 to 32). Each question carries 3 Marks.
- Section D consists of 2 questions (33 to 34). Each question carries 4 Marks.
- Section E consists of 3 questions (35 to 37). Each question carries 5 Marks.
- There is no overall choice. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

SECTION – A (21 X 1 = 21 Marks)

- Q1. Which of the following is not a step in problem-solving?
A) Coding B) Testing C) Execution D) Debugging
- Q2. In Python, the _____ symbol is used for a single-line comment.
A) // B) /* */ C) # D) <!-- -->
- Q3. Select the appropriate immutable data type in Python from the following.
A) list B) int C) dictionary D) set
- Q4. The id() function in Python is used to:
A) Identify the variable type B) Return the memory address of an object
C) Return the size of an object D) Check if two objects are equal
- Q5. What will be the output of print(10 // 3)?
A) 3.33 B) 3 C) 4 D) 3.0
- Q6. _____ is a relational operator in Python.
A) and B) or C) == D) =
- Q7. Identify the error that occurs if you forget to close the parentheses in Python.
A) Syntax Error B) Logical Error C) Run-time Error D) Indentation Error
- Q8. Point out the loop that executes at least once, regardless of a condition or a range.
A) for loop B) while loop C) do-while loop D) None in Python
- Q9. The function that is used to accept values from the user in Python is _____.
A) input() B) get() C) read() D) scanf()
- Q10. What is the output of the statement print(type(3+4j)) ?
A) <class 'float'> B) <class 'complex'> C) <class 'int'> D) <class 'str'>
- Q11. Which statement is used to exit from a loop in Python?
A) stop B) exit C) break D) continue
- Q12. Choose the correct output for the following code snippet.
s = "banana"
print(s.count("na"))
A) 1 B) 2 C) 3 D) 4

Q13. Identify the statement that is correct regarding Python strings and lists.

- A) Strings in Python are mutable. B) Lists in Python are immutable.
C) Strings are immutable, lists are mutable. D) Both strings and lists are immutable.

Q14. What will be the output of the following code given below?

```
s = "PYTHON"
print(s[::-2])
```

- A) PTON B) PTO C) YHN D) PYO

Q15. Predict the output for the following code fragment.

```
s = "mississippi"
print(s.replace("i", "l", 2))
```

- A) mlsslssippi B) mlssissippi C) mlsslssissippi D) mississippi

Q16. What will be printed if the value of i is entered as 5?

```
L = [1, 2, 3]
L.insert(i, 100)
print(L)
```

- A) [1, 2, 3, 100] B) [1, 2, 100, 3] C) [100, 1, 2, 3] D) Error

Q17. Select the correct output for the following code.

```
L = [10, 20, 30, 40]
print(L.pop(2))
print(L)
```

- A) 30, [10, 20, 40] B) 40, [10, 20, 30] C) 2, [10, 20, 40] D) Error

Q18. Which code correctly reverses the string 's'?

- A) s[::-1] B) reverse(s) C) s.reverse() D) rev(s)

Q19. What will be the output of the following?

```
L = [1, 2, 3]
M = L * 2
print(M)
```

- A) [1, 2, 3, 1, 2, 3] B) [2, 4, 6] C) [1, 2, 3, 2] D) Error

Q-20 and Q-21 are Assertion (A) and Reason (R) Type questions. Choose the correct option as:

- (A) A is True, but R is False.
(B) A is False, but R is True.
(C) Both A and R are True, and R is the correct explanation of A.
(D) Both A and R are True, but R is NOT the correct explanation of A.

20. **Assertion (A):** The base/radix of the binary number system is 2.

Reason (R): Binary number system has only two digits, i.e. 1 and 0.

21. **Assertion (A):** The Python expression 'Hello'[1:4] will result in the string 'ello'.

Reason (R): In Python string slicing, the start index is inclusive, and the end index is exclusive.

SECTION – B (7 X 2 = 14 Marks)

22. (i) Explain any two types of computer memory with examples.

2

OR

(ii) Define an Operating System. Mention any two functions of it.

23. While setting up a new computer in a school lab, the technician installs various types of system software to ensure smooth functioning of the machines. If you were the technician, name and explain any two types of system software you would install.

2

24. (i) While writing a Python program to calculate student grades, Hrithik encounters unexpected problems in the code. He wants to study the type of errors in order to overcome the problem. Explain any two types of errors with examples that Hrithik might face in Python while coding.

2

OR

(ii) Rahul is developing a Python program for billing in a shopping mall, where he needs to manage both integers (for item quantity) and floats (for item price). In this case, explain Rahul the difference between explicit and

implicit type conversion with suitable examples.

25. (i) Consider the following code snippet that gives the error that follow the code.

2

```
s = "programming"
print(s.index("z"))
```

Error: ValueError: substring not found (since "z" is not in the string).

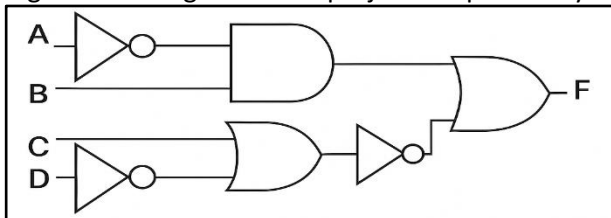
In order to deal with the error, replace the index() function with a suitable string function and rewrite the code that will print the index position of the character to be found or else it should print "Substring not found".

OR

- (ii) State the output of the following Python codes:

- a. list1 = [2, 4, 6, 8]
list1.append([10, 12])
print(list1)
- b. list5 = [2, 4, 6]
list5.insert(1, [10, 20])
print(list5)

26. An electronics student, Neha, is designing a home security system using logic gates. She refers to the below given logic circuit diagram in her project. Help Neha by stating the equivalent Boolean expression of the given circuit? 2



27. Convert the following as directed:

(i) $(2C9)_{16} = (?)_{10}$

OR

(ii) $(423)_{10} = (?)_{16}$

28. (i) What do you understand by Unicode? Differentiate between UTF-8 and UTF-32 encoding.

2

OR

- (ii) State the De Morgan's second law with its mathematical expression.

SECTION – C (3 X 3 = 9 Marks)

29. (i) How do strip(), lstrip(), and rstrip() differ in Python? Give examples to explain your answer.

3

OR

- (ii) Explain the difference between split() and partition() methods with their syntax.

30. A teacher asked Aman to analyse the marks scored by students of his class in the form of a Python list. He needs to display all the marks (whether unique or repeated) in one list and store only the duplicate marks in another list. Help Aman by writing a Python program to perform the same.

3

31. (i) Sneha is preparing a project report in Python where she needs to process text data. Since the text contains a lot of punctuation marks, she decides to clean it first. Help Sneha by writing a Python program to remove all the punctuation marks from the given string.

3

OR

- (ii) Ravi is working on a Python project where he has a list of numbers representing the scores of students in a game. He wants to increase each odd score by 5 and each even score by 10 to adjust the final results. Write a Python program to update the list accordingly and display it.

SECTION – D (4 X 4 = 16 Marks)

32. (i) Verify the following Boolean expression using the truth table:

4

$$X + Y.Z = (X + Y).(X + Z)$$

OR

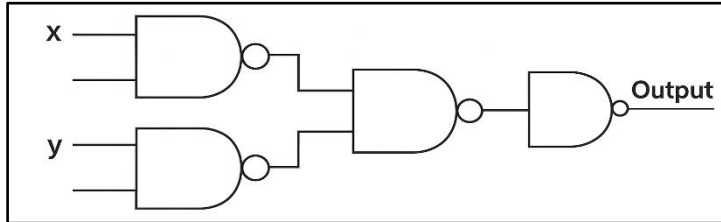
- (ii) Draw the logic circuit diagram and construct the truth table of NAND gate.

33. A company keeps a list of product names in the form of a Python list. Write a Python program to search for a product entered by the user using linear search and display whether it is found or not. 4

34. (i) Draw the equivalent logic circuit diagram for the following Boolean expression. 4
 $F(P, Q, R) = P.Q' + P.R'$

OR

(ii) Consider the following Logic circuit diagram.



Which gate is the above logic circuit equivalent to? Answer with explanation.

35. If you are given a large dataset of numbers in the form of a list, how would you construct a Python program to efficiently extract and display only the prime numbers from it? 4

SECTION – E (2 X 5 = 10 Marks)

36. Roopa is creating a login form in Python where users enter their details as a string. She wants to analyse the input strings to check how many alphabets, digits, and special characters are present in it for validation purposes. Help Roopa to write a Python program to perform this task. 5

37. (i) Ankit was given a list of students' marks by his computer teacher in a Python program. The teacher asked him to find the second highest and second lowest marks in order to analyse the class performance. Write a Python program for Ankit to execute the analysis. 5

OR

(ii) Write a program that reads the email id of a person in the form of a string and ensures that it belongs to the domain @abc-academy.ac. in. (Assumption: no invalid characters are there in the email-id).