

JB Academy, Ayodhya
Half Yearly Examination-2025
Sub: Computer Science (083) Class XI

MM-70

Time Allowed: 03 Hrs.

Instructions: This paper is divided into four sections, section A is objective and section B, C and D are descriptive, attempt questions according to the given instruction. Give examples where ever needed.

Section-A

1. Which of the following is a valid identifier in Python?
a) *1myVar* b) *True* c) *2ndPlace* d) *variable*
2. Which of the following is an immutable data type in Python?
a) String b) List c) Float d) Integer
3. What is the purpose of the pass keyword in Python?
a) It exits a loop b) It does nothing
c) It skips to the next iteration in a loop d) It is used to define a function
4. Which of the following is not a valid data type in Python?
a) int b) float c) real d) bool
5. Which of the following is not a Python keyword?
a) if b) then c) for d) while
6. _____ is used to test the program in one attempt and show you the list of errors in a program
a) Interpreter b) Debugger c) Assembler d) Compiler
7. Which of the following is **not** a type of token in Python?
a) Keyword b) Identifier c) Operator d) Compiler
8. Which of the following is true about while loop in Python?
a) Executes a fixed number of times b) Executes based on condition
c) Does not require a condition d) Only runs once
9. Which of the following is correct about the **elif** statement in Python?
A) It is optional in an if-else block
B) It can only be used once
C) It must be the last condition in the block
D) It does not require a condition
10. What will be the output of following code?

```
count = 0
while count < 3:
    print(count, end=" ")
    count += 1
else:
    print("Finished")
```


a) 0 1 Finished b) 0 1 c) 0 1 2 d) 0 1 2 Finished

11. what will be the output-

```
import math  
print(math.pow(2, math.sqrt(25)))
```

a) 10 b) 32 c) 50 d) 13

12. What is the hexadecimal representation of the decimal number 270?

a) AB b) 10E c) 10F d) E01

13. Which of the following is NOT a valid hexadecimal number?

a) 34G b) ABC c) A7F d) 6EF

14. What will be the output of the code-

```
s = "python"  
print(s.upper())
```

a) Python b) PYTHON c) pYTHON d) python

15. What will be the output of the following expression?

5 + 3 * 2 ** 2

A) 64 B) 16 C) 17 D) 13

16. What happens when **continue** is executed inside a loop?

- A) The program exits the loop
- B) The current iteration is skipped, and the next iteration begins
- C) The loop stops and jumps to the next block after the loop
- D) An error is thrown

17. What will be the output of the following code?

```
for i in range(5):  
    if i == 3:  
        continue  
    print(i, end=' ')
```

A) 0 1 2 3 4 B) 1 2 4 C) 0 1 2 4 D) 0 1 2

18. What happens when **break** is used in nested loops?

- A) Exits only the inner-most loop where **break** is used
- B) Exits all loops immediately
- C) Exits the outer-most loop
- D) Raises a Syntax Error

19. The symbol _____ is used to show process in a flow chart?

a) Circle b) Oval c) Rectangle d) Diamond

20. What will happen if multiple **elif** conditions are True?

- A) All the True **elif** blocks execute
- B) Only the first True **elif** block executes
- C) None of the blocks execute
- D) It will cause a syntax error

Section-B

Attempt any 10 questions (2 marks each)

1. Define Identifiers and rules to name them with example.
2. Write down any two features of strings.
3. Differentiate between else and loop else statements.
4. What are different arguments of range ()? Give one example.
5. When is an infinite loop created? give one example.
6. What is purpose of indentation in python program, explain with example.
7. Write python statement to calculate the given expression- $x^{\sqrt{a^2+b^2}}$
8. Differentiate between logical and run time errors with suitable example.
9. Convert the while loop code to for loop-

```
import math
a,b=3,10
while a>0:
    print(math.pow(b,a))
    a-=2
    b+=1
print("Thanks")
```

10. Convert binary (10101.110) to decimal number.
11. Draw a flow chart to print factorial of a number.
12. Find errors in the given code and also write the corrected code-

```
total = = 0
for i in range(1, 11,-1)
    total += k:
print(Total)
```

Section-C

Attempt any 5 questions (3 marks each)

1. Write program to print the pattern

```
% % % % %
# # # #
% % %
# #
%
```

2. Predict the output-

```
for i in range(1,6):
    a=65
    for j in range(1,i+1):
        print(a,end="$")
    a+=1
print()
```

3. Convert following as directed-
 - (i) $(AC62)_{16}$ to Binary form
 - (ii) $(3271)_8$ to $(?)_2$
4. Write python code to display the given pattern-


```

1          2
3          4
5  6
7
      
```
5. Write a Python program that accepts a year as input and determines whether it is a **leap year or not**, using nested if-else logic:
 - If year is divisible by 4 →
 - If year is divisible by 100 →
 - If year is divisible by 400 → Leap Year
 - Else → Not Leap Year
 - Else → Leap Year
 - Else → Not Leap Year
6. Write a program to enter any number and print sum of all digits which are odd.
 For example- If number is-34679 then output should be 3+7+9=19
 Note- If number is of one digit, then print "**Invalid number**".

Section-D

Attempt any 3 questions (5 marks each)-

1. Write down the procedure of finding subtraction of two binary number using 2's complement method. Give suitable example to support your answer.
2. (a) Write a program to input one string and display the length and number of vowels in it.
 (b) Write python code to print sum of the given series-

$$S = 10 + \frac{\sqrt{2}}{2} + \frac{\sqrt{3}}{3} + \frac{\sqrt{4}}{4} + \dots \dots \dots \frac{\sqrt{n}}{n}$$

Value of n should be taken through the user.

3. (a) Write a program to enter 5 numbers and print the maximum and minimum number among them.
 (b) Write a program to check if a given number is an Armstrong number or not.

(Note: If a 3-digit number is equal to the sum of the cubes of its each digit, then it is an Armstrong number)

4.(a) Predict the output of the given code-

(3+2)

```
s="Com4puter@12science"  
c=0  
for i in s:  
    if not i.isdigit()==True:  
        print(i,end="")  
    else:  
        c+=1  
print()  
print("Result=",c)
```

(b) Differentiate between ASCII, ISCII and UNICODE formats.