

**Class: XI**

**Session: 2023-24**

**Subject: Computer Science (083)**

**Time allowed: 3 Hours**

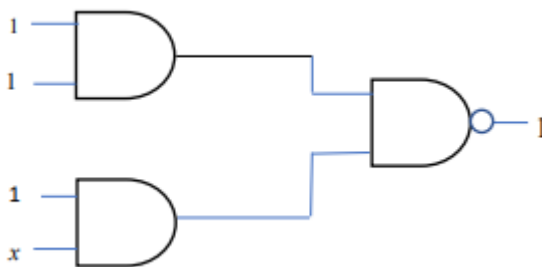
**Maximum Marks: 70**

**General Instructions:**

- Please check this question paper contains 35 questions.
- The paper is divided into 4 Sections- A, B, C, D and E.
- Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.
- Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.
- Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.
- Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.
- Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.

**SECTION A**

1. Which of the following is a valid data type in Python?  
a) Real                      b) Float                      c) Decimal                      d) Letter
2. What will the following expression be evaluated to in Python?  
 $2^{**}2^{**}2$   
a) 16                                      b) 128                                      c) 64                                      d) 8
3. State True or False for the following statement:  
"Python is a low-level language"
4. Consider the following logic gate diagram



What must be the value of x for which the above diagram is accurate?

- a) 1                      b) 0                      c) both a and b
5. 1 KB of data is equivalent to  
a) 1024 bits                      b) 220 bytes                      c) 2-10 Mb                      d) 213 bits
  6. IDLE stands for

- a. Information Development Logic Environment
- b. Interaction Development Logic Environment
- c. Integrated Development and Learning Environment
- d. Interaction Developer and Logic Environment

7. The following code produces an error:

```
a=int(input('Enter a number'))
c=a+b
print(b)
```

What is the name of the error?

- a. Name Error
- b. Undefined Error
- c. Type Error
- d. Syntax Error

8. Select the correct output for the following code:

---

```
for i in range(1,10):
    if i%2==0:
        continue
    else:
        print(i,end=" ")
    ,
```

- a. 1 3 5 7 9
- b. 2 4 6 8 10
- c. 1 2 3 4 5 6 7 8 9
- d. 2 4 6 8

9. Write the difference between UTF 8 and UTF 32.

10. Write the full form of ASCII.

11. Which of the following is a wrong pair of application and category?

- a. WhatsApp: General Purpose software
- b. Gmail: Customised software
- c. Python: Free and Open-Source software
- d. MS Word: Proprietary software

12. Fill in the blank

\_\_\_\_\_ is a language translator which reads a program line-by-line when run.

- a. Compiler    b. Assembler    c. Transmitter    d. Interpreter

13. Which of the following is true for Secondary memory?

- a. It is faster than Primary memory
- b. It is directly accessed by the CPU
- c. It is faster than RAM
- d. It is a non-volatile memory

14. The base values of binary, octal and hexadecimal are

- a. 10, 80 and 160 respectively.
- b. 4, 8 and 16 respectively.
- c. 2, 8 and 16 respectively.
- d. 1, 8 and 16 respectively.

15. a) Convert -----  $(101100001110)_2 = ( \quad )_8$

16 Ram wanted to make a program which takes in two numbers from the user and print the two numbers as shown below:

Input: Enter number 1=>23

Enter number 2=>24

Output: 23.0,24.0

He wrote the following code but doesn't know what the last line is supposed to be

```
a=float(input('Enter number 1=>'))
```

```
b=float(input('Enter number 2=>'))
```

```
...
```

What would be the last line of his code which produces his desired output?

- a. `print(a+b)`
- b. `print(a,b)`
- c. `print('a', ' ', 'b')`
- d. `print(a,b,sep=', ')`

The following questions 17 and 18 are Assertion-Reasoning based, answer the questions by choosing one of the following responses:

- a. Both A and R are true and R is the correct explanation of A.
- b. Both A and R are true but R is not the correct explanation of A.
- c. A is true but R is false.
- d. A is false but R is true.

17. A: Python is not a low-level language.

R: It uses English-like words and simple syntax which is very easy to understand to humans.

18. A: Variables are not containers in Python

R: Variables in Python don't directly store the data but they reference objects in memory

## **SECTION B**

19 Rewrite the following operations in a syntax followed by Python:

a.  $2^{23} - \left(\frac{2}{75} \times 3\right)^{\sim}$       b.  $\frac{17 \times 34^7}{24}$

OR

Write the difference between SRAM and DRAM.

20. Khaled wrote the following code to input a number and check whether it is a prime number or not. His code is having errors. Rewrite the correct code and underline the corrections made.

```
ch=True
n=int(input("Enter number to check="))
for i in range (2, n//2+1):
    if n%i=0:
        ch=False
        break
    else:
        ch=True
if ch==True:
    print("Number is prime")
else
    print("Number is not prime")
```

21 Explain any two funtions of random module.

OR

Explain any two funtions of math module

22 Write a Python function to count the number of elements within a specified range.

23 Write the output of the following code:

i.

```
height=5
num = 1
for i in range(1, height + 1):
    for j in range(i):
        print(num, end=" ")
        num += 1
    print()
```

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

x, y =2, 5

x, y =y, x+2

print(x, y)

24 Define identifiers. Identify the valid and invalid identifiers in the following list.

i) x\_y125z

ii) \_abc@5

iii) abc\_d53

iv) break

- 25 Write a program in python to obtain three numbers and print their sum and average

### **SECTION C**

- 26 Define operators in python. Explain relational and logical operators with example.
- 27 Write a program to find and print the grade of a student when the user inputs their percentage. Grades are allocated as given in the table below:

Percentage of Marks	Grade
Above 90%	A
80% to 90%	B
70% to 80%	C
60% to 70%	D
Below 60%	E

- 28 Write a python program to find out the greatest of three user defined numbers.

OR

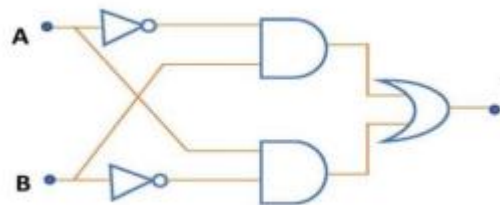
Write a program in python to enter a number and print whether it is an even number or an odd number

29. Explain Jump statements with suitable example.

30. i. What is the need of RAM? How does it differ from ROM?  
ii. What is the need for Secondary Memory?

OR

- I Write Boolean expression of the given logical gate?



- ii Explain the Associative law with the help of truth table.

### **SECTION D**

- 31 Explain different types of errors in python with examples
32. Write a menu driven program to implement a simple calculator in python. The program reads two integer values and provides choice for the user to perform Addition, Subtraction, multiplication, and division operations on those values. The program continuously gives choice for the user to perform the above operations till the user select exit option.

### **SECTION E**

33. Write the output of the following code:

- i. 

```
(a,b,c)=(10,20,30)
(p,q,r)=(c-5,a+3,b-4)
print('a,b,c:',a,b,c,end='')
print("p,q,r:",p,q,r)
```

- ii.     (a,b)=(10,5)  
           print(a/b)  
           print(a//b)  
           print(a%b)  
           print(a\*\*2)
  
- iii.     for i in range(1,5):  
           for j in range(i):  
               print('\*',end="")  
           print()
  
- iv.     for i in range(1,5):  
           for j in range(i):  
               print('\*',end="")  
           print()
  
- v.     a=20  
           b=10  
           a//b  
           print(c+2/2)

34. Rewrite the following code using for loop.

```
i=100
while(i>0):
    print(i)
    i-=3
```

35. Evaluate the following:-

- (i)  $56//5*2**2$
- (ii) 5 and not 5 or 0
- (iii)  $12/4*3+(7*4)$
- (iv)  $(9+10)*(5 \text{ and } 0)$
- (v)  $(5+4)-(9*8)+(7-4)$