

**GURUKUL KURUKSHETRA**  
**COMPUTER SCIENCE**  
**SEPTEMBER EXAMINATION**  
**SESSION (2019-20)**  
**CLASS: XI (083)**

*Time Allowed: 3 Hours*

*Maximum Marks: 70*

- Note:**
- (i) *All questions are compulsory.*
  - (ii) *Answer the questions after carefully reading the text.*
  - (iii) *Marks of each question are given against it.*
  - (iv) *Marks will be given for good hand writing.*
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**1. Answer the following questions based on *Python Programming and Computational Thinking*:**

- (i) 'Python is an interpreted high level language'. What does it mean to you? 1
- (ii) What is Type casting? Elaborate with example. 1
- (iii) What is IDLE? 1
- (iv) Define a keyword. Give two examples. 1
- (v) What are the two modes of working in Python? 1
- (vi) Draw a flow chart to find the greatest of 3 numbers. 2
- (vii) Write the output of the following: 3
  - (a) a,b=20,30
  - a=a+5
  - b=b+10
  - a,b=b,a
  - print (a)
  - print (b)

(b) `x="hello world"`

`y=2.3`

`print (type(x))`

`print (type(y))`

(c) Which of the following are invalid identifiers?

(1) Myfile (2) \_abc (3) As\$swer (4) 99flag

(viii) Write logical expression for the following: 2

(1) Name is Riya and age is between 10 to 15.

(2) CITY is either 'Delhi' or Mumbai' but not 'Kolkata'.

(ix) Write the output of the following program on execution if `x=90`. 2

`x=90`

`if x>60:`

`if x>25:`

`print("ok")`

`if x>90:`

`print("good")`

`elif x>40:`

`print("average")`

`else:`

`print("no output")`

(x) Write the output of the following: 2

`L=[ ]`

`L1=[ ]`

`L2=[ ]`

`for i in range(6,10):`

`L.append(i)`

`for i in range(10,4,-2):`

`L1.append(i)`

`for i in range(len(L1)):`

`L2.append(L[i]+L1[i])`

`L2.append(len(L)-len(L1))`

`print(L2)`

- (xi) Define Bubble sort? Elaborate with an example. 2
- (xii) Suppose `L=["Good",5,["Students","Words"],"few"]`  
 Consider the above list and answer the following: 2  
 (a) `L[2:]` (b) `L[2][1]`
- (xiii) Write the output of the following: 1  
`L=['a','z','p','c','m']`  
`L.remove('c')`  
`print(L)`  
`print(L.pop())`
- (xiv) What will be the output of the following programming code? 1  
`s1="My Python Programming"`  
`print(s1[-5:-1])`  
`print(s1[1:5])`
- (xv) Consider the string `s1="Green Revolution"`. 4  
 Write statements in python to implement the following:  
 (a) To replace all the occurrences of letter 'a' in the string with "\*".  
 (b) To display the starting index for the substring 'vo'.  
 (c) To remove 'Gre' from the left of the string.  
 (d) To repeat the string 3 times.
- (xvi) Write will be the output of the following python code, justify your answer. 2  
`x=5`  
`y=0`  
`print('A')`  
`try:`  
`print('B')`  
`A=x/y`  
`print('C')`  
`except ZeroDivisionError:`  
`print('F')`  
`except:`  
`print('D')`  
`finally:`

```
print('Over')
```

(xvii) Write a program to generate the following series. 2

```
1 2 3
1 2 3
1
```

(xviii) Write a program in python to calculate the factorial of 5. 2

(xix) Give the output of the following python statements. 2

```
y=5
for i in range(1,3):
    for j in range(0,i):
        z=i+j-1
        if(z%2)==0:
            y=y+z
        elif(z%3)==0:
            y=y+z-2
    print("y=",y)
```

(xx) Write the output of the following: 2

```
L=[10,20,30,40]
L1=[500,600]
L2=[35,45]
L1.extend(L2)
L.insert(25,2)
print(L1+L2)
print(L1)
print(L.index(30))
print(L2*2)
```

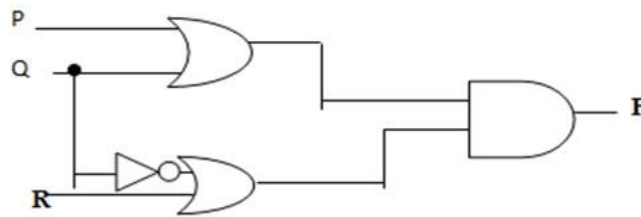
(xxi) Write a program to find and display prime numbers below 50. 3

(xxii) Find the output of the following: 1

```
T1=(10,20,30,40,50)
T2=(100,200,300)
T1,T2=T2,T1
print(min(T1))
print(max(T2))
```

2. Answer the following questions based on *Computer System and Organization*.

- (i) What are the components of CPU? What is its role? What is the function of control unit of CPU? 2
- (ii) What is cloud computing? Write two benefits. 1
- (iii) Write the difference between compiler and interpreter. 2
- (iv) Two devices used by the supermarket point-of-sale (POS) terminal are a barcode reader and keyboard. Name two other input/output devices used at the POS and give a use for each device. 1
- (v) Why are NAND and NOR gates more popular? 1
- (vi) Answer the following questions:- 4
- (a) Convert  $(10110.0101)_2$  into decimal number.
- (b) Convert  $(325)_{10}$  into octal number.
- (c) Convert decimal number (0.375) to its equivalent binary number.
- (d) Add 101101 to 11001.
- (vii) Draw logic circuit diagram for the following expression: 2
- $$Y = a e + \bar{e} o + \bar{o} \bar{a}$$
- (viii) State DeMorgan's Law of Boolean Algebra and verify them using truth table. 2
- (ix) Write the equivalent Boolean Expression for the following Logic Circuit: 2



- (x) What is parallel computing? 1

3. Answer the following questions based on *Society, Law and Ethics*.

- (i) What is cyber safety? Why is it important? 1
- (ii) What is private browsing? Why is it considered a better way of browsing the internet? 1
- (iii) What is cyber trolling? 1
- (iv) Define the following terms: 2

- (a) Digital footprint
- (b) Cookies
- (v) What is cyber bullying and cyber stalking? 2
- (vi) What is an IP address? 1
- (vii) What is a computer virus? How can it affect your computer? 1
- (viii) What is the role of firewall? 1
- (ix) Differentiate between http and https. 2