

Roll No. _____

Code : 11201920CS-A

Please check that this question paper contains 5 questions and 8 printed pages.

Class : XI
COMPUTER SCIENCE

Time Allowed : 3 Hours Annual Examination Feb.-March - 2020 Maximum Marks : 70

General Instructions :

- All the questions are compulsory
- The Question paper contains 5 Questions.
- Programming language used : C++

SECTION - A

1. (a) Give any two advantages of parallel computing. 1
- (b) Rahul is experiencing that his computer has slowed down and it takes longer time to access any file in a disk. Suggest an appropriate utility software he can use to improve disk access? 1
- (c) Identify the following as input / output / processor / storage devices : 1
scanner, pendrive
- (d) Find the greater from the following 1
 $2^{30} \text{ MB} \times 2^{20} \text{ KB}$, $2^{12} \text{ MB} \times 2^8 \text{ GB}$
- (e) Name the encoding scheme that could represent all known languages, and characters. 1
- (f) Solve $= (10011001)_2 + (01011101)_2$ 1
- (g) Verify using the truth table : 2
 $A(A+B) = A$

OR

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

- (h) Draw a flowchart to find whether a given number is an armstrong number or not. 2

SECTION - B

2. (a) Arrange in ascending order 1
 $3^{**2**3}, (3^{**2})^{**3}, 3^{**3**2}, 3^{**2**2}$
- (b) Find the output of the following if the user enters a value 15 for x: 1
`x = 10`
`x = input('Enter a value')`
`x = 20`
`print(x*x)`
- (c) Identify the following as identifiers, keywords or invalid Python tokens : 1
`#sd, FOR, Print(), while`
- (d) Predict the output of the questions : 2
(i) `a=25%2`
`b=a**2`
`c=b//2`
`c-=a+b+c`
`b+=a+c*c`
`print(a, b)`
(ii) Output of following code snippet would be :
`A, B = 10, 20`
`A, B = B+10, A*2`
`print(A, B)`
- (e) Write equivalent Python expressions : 2
(a) $F = a^4 + b^2c \div d$
(b) $\sin x + \tan^2 x$
- (f) Output of the following program would be : 2
`str="cyber world"`
`for i in str:`
`print(i)`
`if i=='Cyber':`
`print('*')`

- (g) Write a program in Python to sort a given list of numbers using bubble sort.

3

OR

Write a program code in Python to :

- (i) Declare a list of strings having value : hello, morning, evening, great, fine, demo.
- (ii) accept an integer value n from the user
- (iii) display all the strings of length n.
- (iv) count number of strings with given length.

For example : if the list has following elements

lists=['hello', 'morning', 'evening', 'great', 'fine', 'demo']

and if user enters n as 5 then output should be

enter an integer 5

hello

great

2 strings of given size

- ∞ (h) Write a program to accept a string from the user and display the number of times letter 'a', 'e', 'i', 'o', 'u' appears in the string

3

OR

Write a program in python that searches for an element in the list and if the value of element is found it should display a message 'found'. If the element is not in the list then it should add the element to the list and display the list.

3. (a) Sushmita has written the following code to create a dictionary in Python but it is showing errors on running. Suggest appropriate corrections in the code :

1

Stream=['S'-'Science' ; 'C'-'Commerce' ; 'V'-'Vocational']

- (b) (i) Rounak has written following code in Python. But the code is not running properly. Give appropriate suggestions for stmt1 so that the following code runs properly :

1

program to find square root of a number

```
_____ #stmt1  
x=int(input('Enter a number'))  
print(math.sqrt(x))
```

(ii) Write code to display keys of a dictionary 'D1'

(c) (i) Predict the output of the following python code

```
a,b = 5,6  
b=6  
c=a==b  
d=a<b  
e=not a  
if not c or d:  
    print("One")  
elif not c or not d and e:  
    print("Two")  
elif not c or d or not e and d:  
    print("Three")  
else:  
    print("Four")
```

(ii) Find the error and write correct code :

```
List1=[1, 2]  
List1.append(5,6)
```

(d) a. Predict the output of the following code:

```
for i in ['a', 'b', 'c', 'd'][: :-1]:  
    print (i)
```

OR

```
Fruits = ['berry', 'Orange', 'Mango', 'Banana']  
print Fruits[1][-1]  
print Fruits[2][-2]  
print Fruits[3][-3]  
print Fruits[0][-4]
```

→ (e) Write a program in Python to accept two numbers from the user and generate random numbers between a range entered by the user 2

(f) Rewrite the following code using for loop 2

```
n = 10
```

```
sum = 0
```

```
i = 1
```

```
while i<=n:
```

```
    sum = sum + i
```

```
    i = i+1
```

```
print("The sum is", sum)
```

(g) Write the output of following code : 3

```
m_list=[1,1,1,2,2,3,2,1,2,3,2,3]
```

```
f={ }
```

```
for item in m_list:
```

```
    if (item in f):
```

```
        f[item]+=1
```

```
    else:
```

```
        f[item] = 1
```

```
for key, value in f.items():
```

```
    print (key, value)
```

OR

Consider the dictionary

```
Dict= {1:10, 2:20, 3:30, 4:40}
```

Write commands to

(i) To print number of key-value pairs in the dictionary

(ii) To print all the keys in the dictionary

(iii) To change the value of key 3 to 60.

(h) Write a program in python that reads all the integer elements of the list, if the element is a multiple of 5, it should multiply the number by 2 else it should multiply the number by 3 and displays them. 3

OR

Write a program in Python to accept a number from the user and reverse the given number.

- (i) (a) Write a program in Python to find the factors of a given number. 4
(b) Consider a tuple t1=(12, 14, 13, 12, 13, 14, 15, 16)

Write a code statement to display one maximum value and the occurrences of the item 12 in tuple t1.

SECTION - C

4. (a) Name the type of SQL command that provides the ability to query information from the database and to insert tuples into, delete tuples from and modify tuples in the database? 1
- (b) _____ command is used to add new rows and _____ command is used to add new columns to a table. 1
- (c) In MySQL, data type char(n) is _____ length and varchar(n) is _____ length 1
- (d) Anubhavi has to remove records of all the employees with date of birth before 1940. Name the command used to remove data in a relation from an SQL database. 1
- (e) In a table in My SQL, a table has 4 rows and 3 columns. 2 columns and 5 rows have been added to the table. Predict the degree of the relation before and after modification. 2

OR

Write any two differences between primary key and foreign key.

- (f) (i) Sonia has to find the highest marks obtained by student in MARKS table. Name the function in My SQL that will be useful for doing so. 2
(ii) Monu has changed his mobile number and the changed number has to be entered into the table. What type of SQL command would be used to change mobile number?

- (g) Consider a table Employee with columns : Empno, ename, edesig, salary, date_birth, city.

3

Write query to :

- (i) Display list of employees whose date of birth is after 31 December 2000 in descending order of their salary.
- (ii) Increase salary of all the employees by 10 percent.
- (iii) Display list of different cities in the employee table.

- (h) Consider table 'Activity'

4

Relation : Activity

Actno	Actname	Act_Date	No_of_days
A202	Drama	12-12-2003 .	10
A302	Natyakatha	10-08-2000	12
A345	Kavya	11-11-2001 .	15
A321	Craft	08-05-2000	5
A292	Art	06-06-2002 .	20
A101	Dance	11-07-2003 .	15

- (i) Write command to create table 'Activity' assuming appropriate datatypes of various attributes as per the values in columns.

Predict the output of the following queries : (½ mark each)

- (ii) select count(*) from activity where actno in ('A292', 'A302');
- (iii) select sum(no_of_days) "total Days" from activity where Act_date > '01-01-2001';
- (iv) select * from activity where no_of days < 15;
- (v) select Actname from Activity where Actname like 'D%';

SECTION - D

5. (a) Name the term used to describe the trail, traces or 'footprints' that people leave online while working on internet.

1

- (b) Name an attack upon an individual or a group through the use of electronic means such as instant messaging, social media, email and

other forms of online communication with the intent to abuse, intimidate or overpower.

1

(c) Differentiate between Virus and Trojans.

2

(d) (i) When we surf on the internet, bits of information is left by websites on your computer in the form of small text files. What are these text files known as?

2

(ii) Name the one attack is which a hacker attempts to redirect a website's traffic to another malicious / illegitimate website by redirecting the legitimate URL.

(e) List any four rules one should follow while using social media.

2

(f) Differentiate between malware and adware.

2