SAMPLE PAPER, 2020
Class – XI
Informatics Practices

Time: 3:00hrs   **MM: 70**

General Instructions:
All questions are compulsory

- Question Paper is divided into 4 sections A,B,C and D.
- Section A comprises of questions (1 and 2).
- Section B comprises of questions from Data Handling.
- Section C comprises of questions from Data Management.
- Section D comprises of questions from Society, Law and Ethics-1(SLE-1).

Section - A

1	A	What is the importance of an OS?	1
	B	The _____ unit controls or supervises the processing taking place.	1
	C	What is the use of encoding system?	1
		Or	
	C	What is the most and least significant bit in a binary code?	
	D	(i) Convert 161 into its binary equivalent number.	2
		(ii) Convert the binary number 11011100 into its equivalent decimal number.	
	E	What is the difference between interactive mode and script mode in Python?	2
	F	Predict the output of the following code:	2

```
x,y = 20,60
y,x,y=x,y-10,x+10
print(x,y)
```

	G	Write a program that accepts cost of goods sold (cgos) revenue generated, operating cost(oc) and prints Gross profit, net profit and net profit percentage. [**Hint: Net Profit = Revenue – cgos - oc**]	3
		Or	
	G	Write a program that asks for your height in centimeters and then converts your height to feet and inches (1 foot = 12 inches, 1 inch = 2.54cm)	

Answer the following questions:

2	A	What will the following code print?	1

```
a=3
b= 3.0
print(a == b)
print( a is b)
```

    (i) True False
    (ii) True True
    (iii) False True
    (iv) False False

	B	Predict the output	1

```
x,y = 4,8
z= x/y*y
print(z)
```

		Or	
	B	int('a') produces error. Why?	
	C	What will be the output produced by these code statement?	1

(i)   bool(int('0'))

(ii)   bool(str(0))

D   What will be the output of the following code?   1

      (i)   13 or len(13)

      (ii)   Len(13) or 13

E   (i)   Write a program code to add the odd numbers up to a given value N and print the   2
               result.

F   Find the errors and underline it.   2

```
weather = 'raining'
if weather = 'sunny':
    print('wear sunblock')
elif weather = "snow":
    print("Going skiing"):
else:
    print(weather)
```

Or

F   What is following code doing? What would it print for input as 3?

```
 n= int(input( "Enter an integer:"))
if n<1:
   print("invalid value")
else:
   for i in range(1, n+1):
       print( i*i )
```

G   A year is a leap year if it is divisible by 4, except that years divisible by 100 are not leap years   3
     unless they are also divisible by 400. Write a program that asks the user to input a year and prints
     out whether it is a leap year or not.

Or

G   Write a program to print every integer between 1 and n divisible by m. Also report whether the
     number that is divisible by m is even or odd.

H   Write a program to input length of three sides of a triangle. Then check if these sides will form a   3
     triangle or not. (Rule is a+b>c; b+c>a; c+a>b)

I   Write the most appropriate List methods to perform the following tasks: 4

      (i)   To remove elements in list slice.

      (ii)   To add an item at the end of the list.

      (iii)   To add multiple elements to a list.

      (iv)   To remove the first occurrence of an element from the list.

Section - B

3 A   What will be the output of the following Python code?   1

```
        i = 1
        while True:
          if i%2 == 0:
             break
          print(i)
          i += 2
```

      (i)   1

      (ii)   1 2

      (iii)   1 2 3 4 5 6 …

      (iv)   1 3 5 7 9 11 …

B   What will be the output of the following Python code?   1
```
>>>example = "snow world"
>>>example[3] = 's'
>>>print example
```
a) snow
b) snow world
c) Error
d) snos world

C   What will be the output of the following Python code?   1
```
string = "my name is x"
for i in string.split():
    print (i, end=", ")
```

D   Write a program that prompts for a phone number of 10 digits and two dashes, with dashes after   2
the are code and the next three numbers. For examples: 017-555-1212 is a legal input.
Or

D   Write a program that reads email-id of a person in the form of a string and ensure that it belongs
to domain @edupiller.com (Assumption: No invalid character are there in email-id).

E   Consider the following array: 3
Ar1 =

3	4	1
6	8	5
2	1	3

Ar2=

2	4	2
1	9	1

Ar3=

6	1
2	1
8	5

Now Give out oput of the following statements of Python:

```
JAr1=np.concatenate((Ar1,Ar2), axis=0)
Jar2 = np.concatenate((Ar1,Ar3), axis=1)
Jar3=np.concatenate((Ar1,Ar2.T), axis = 1)
```
Or

E   Given an array:
```
ary = np.arange(24).reshape(4,6)
```
Now give the output of the following:
    (i)   np.hsplit(ary,3)
    (ii)   np.vsplit(ary,2)

F   Given an array: 3
```
ary = np.arange(24).reshape(4,6)
```

Give the output of the following statement:

```
np.split(ary, [1,4])
```

G   Given arrays are: 4

A =

1	1	2
3	5	8
13	21	34

B =

0	9
3	12
6	15

X =

1
3
2

Y =

1	3	2

Write commands to accomplish the following:
- (i) Array A's product with 2
- (ii) Array B divided by 3
- (iii) Array A's product with array X
- (iv) Array Y's product with array A

Or

G Given a string:
 astring="GOOD MORNING INDIA"
Give the output of the following statements:
- (i) a5=np.fromiter(astring, dtype='U2')
- (ii) a6=np.fromiter(astring, dtype='U1', count = 8)

Give output of the following statements:
- (iii) a7=np.arange(3,20,4)
- (iv) a8=np.zeros([3,4], dtype=np.float64, order='F')

Section C

4 A Which keyword eliminates the redundant data from a query result? 1

B Give the examples of any two DDL commands. 1

Or

B What is a constraint in MySQL?

C Differentiate between Primary Key constraint and Foreign Key constraint. 1

D "MAX" keyword belongs to which categories in Mysql? 1
(i) Aggregate functions
(ii) Operators
(iii) Clauses
(iv) All of the mentioned

E Can I define multiple unique constraints on a table? 1
 (i)   Yes   (ii) No   (iii) Can't say (iv) None of these

F   (i)   Write MySQL command to create the following database table: 3
LIBRARY

COLUMN_NAME	DATATYPE(SIZE)	CONSTRAINT

BOOKID	INT(10)	PRIMARY KEY
BOOKNAME	VARCHAR(20)	NOT NULL
TYPE	CHAR(4)	
AUTHOR	VARCHAR(20)	
NO_OF_COPIES	INT(6)	DEFAULT 5
PRICE	DECIMAL(9,2)	

    (ii)   Change the column width of "BOOKNAME" to varchar(30)
    (iii)   Declare Not Null Constraint for the field "Type".

G   Find the output of the following MySQL statements based on the following LOAN table: 3

SL	NAME	AMOUNT	INSTALLMENTS	RATE	STARTDATE
1	Suraj Agarwal	300000	36	12.00	2009-07-19
2	Kashish Agarwal	500000	48	10.00	2008-03-22
3	Nafeel Ayaan	300000	36	NULL	2007-03-08
4	Akansha Mishra	800000	60	10.25	2008-12-06
5	Vedansh Shah	200000	36	12.50	2010-01-03
6	Fahad Arif	700000	60	12.75	2008-06-05
7	Vidhi Agarwal	500000	48	NULL	2008-03-05

    (i)   SELECT RIGHT(Name, 5) FROM Loan WHERE Installments=48 OR Rate IS NULL;
    (ii)   SELECT INSTR(Name, 'is') FROM Loan WHERE Amount IN(500000, 250000, 800000);
    (iii)   SELECT DAYOFMONTH(Startdate) FROM Loan WHERE Rate IS NULL;

Or

G   Given 'Employee' table as follows:

Employee_ID	NAME	Commission
101	Md Raghib	NULL
102	Shashank Khanna	8900
103	Priyanshu Das	NULL

What values will the following statements return?
    (i)   SELECT COUNT(*) FROM Employee;
    (ii)   SELECT COUNT(Commission) FROM Employee;
    (iii)   SELECT SUBSTR(NAME, 4) FROM EMPLOYEE;

H Shubhra has created a table **EMPLOYEE** to manage the database of the employee working in her organization.   4

```
+-------+------------+-----------------+------------+---------------------+-----------+
| JOBID | EMPLOYEEID | NAME            | SALES      | JOBTITLE            | SALARY    |
+-------+------------+-----------------+------------+---------------------+-----------+
| 101   | E2         | VIJAY SINGH TOMAR | 1300000.00 | PRESIDENT          | 200000.00 |
| 102   | E1         | SUMIT SINHA     | 1100000.00 | VICE PRESIDENT      | 125000.00 |
| 102   | E4         | MOHIT RAMNANI   | 1250000.00 | VICE PRESIDENT      | 125000.00 |
| 103   | E3         | AJAY RAJPAL     | 1400000.00 | ADMINISTRATION ASSIS | 80000.00 |
| 103   | E5         | SHAILJA SINGH   | 1450000.00 | ADMINISTRATION ASSIS | 80000.00 |
+-------+------------+-----------------+------------+---------------------+-----------+
```

Help her to write MySQL queries for the following purposes"
    i.   To calculate total sales done by the employees working as vice president.
    ii.   Display all the job types available.
    iii.   Add a new column AADHARNO of VARCHAR(12).
    iv.   Rearrange the JobTitle Field after Name Field.

Or

H   Observe the above table EMPLOYEE and answer give output of the following MySQL statements:
- i.   SELECT CONCAT(LEFT(JOBTITLE,4),RIGHT(NAME,4)) FROM EMPLOYEE;
- ii.   SELECT SUBSTR(NAME, 3,5) FROM EMPLOYEE;
- iii.   SELECT SALES/LENGTH(NAME) FROM EMPLOYEE WHERE NAME LIKE '---I%';
- iv.   SELECT INSTR(NAME , 'SIN') FROM EMPLOYEE;

Section D

5   A   Data _____ is used to ensure confidentiality.   1
      a) Encryption
      b) Locking
      c) Deleting
      d) Backup

   B   What is cyber safety? Why is it important?   1

   C   What are cookies?   1

   D   What is digital footprint? Why is it so important?   2

   E   Describe why authentication is important for file protection.   2

   F   Describe the following security issues and suggest a way of protecting against it.   3
- (i)   Phishing
- (ii)   Spyware
- (iii)   Viruses

     Or

   F   Write any three measures to keep the data secure.

INFORMATICSPRACTICES(065)

Time: 3:00 hrs.   **Class-XI**   **M.M: 70**

General Instructions:
- ➤ All questions are compulsory
- ➤ Question Paper is divided into 4 sections A,B,C and D.

SECTION-A

1. **Answer the following questions:**

a. Define compiler?   (1)

b. What are various categories of system software?   (1)

c. What is the function of utility softwares?   (1)

OR

Expand the following:
i. ROM   ii. EEPROM

d. Convert 20_{10} into binary equivalent number.   (2)

e. What is the difference between interactive mode and script mode in Python?   (2)

f. How many types of comments are there in Python? Give example for each of them.   (2)

g. Write a Python script to accept any value and check if it is palindrome number.   (3)

OR

Consider below give tow code fragments. What will be their outputs if the inputs are entered as:
(i) 'Jacob'   (ii) '12345'   (iii) 'END'

```
while True:
        name=input("Enter name ('end' to exit):")
        if name=="end":
                break
        print("Hello",name)
else:
        print("Wasn't it fun?")
```

2. **Answer the following questions:**

a. Suppose listExample is ['h','e','l','l','o'], what is len(listExample)?   (1)
```
a) 5
b) 4
c) None
d) Error
```

b. What is the output of the following code?   (1)
```
if (4+5 == 10):
        print ("TRUE")
else:
        print("FALSE")
print("TRUE")
```

OR

What is the output of the following code?
```
if int('zero')==0:
        print("zero")
elif str(0)=='zero':
        print(0)
elif str(0)=='0':
        print(str(0))
else:
```

```
        print("none of the above")
```
c. Rewrite the following code after removing errors. (Underline the corrected code):   (1)
```
if n==0
        print("zero")
elif: n==1
        print("one")
elif

        n==2:
        print("two")
else n==3:
        print("three")
```

d. Explain the difference between insert() and pop() methods of list.   (1)

e. Write a program to input 5 integers and then print the smallest number, assuming values are not   (2)
    same.
    Note : Predefined methods should not be used except range().

f. Give python code which accepts percentage and prints grade.   (2)

    Criteria for grade is as given below:

Percentage Range	Grade
80 – 100	A
60 – 79.99	B
< 60	C

OR

Rewrite the following code using while loop:
```
Min=0
Max=num
if num<0:
        min  = num
        max = 0
        for i in range(min, max+1):
                sum += i
```

g. Write a python program to print every integer between 1 and n divisible by m. Also report   (3)
    whether the number that is divisible by m is even or odd.

OR

Write a program that inputs cost price and selling price for 10 items. The program then prints if
the overall occurred or loss occurred.

h. Write a program to accept the age of N employees and count the number persons in the   (3)
    following age group:
    (i) 26 – 35   (ii) 36 – 45   (iii) 46 – 55.

i. Name any four methods of list or any four methods of dictionary with example.   (4)

3.   <u>**SECTION-B**</u>

a. **What is the use of the zeros () function in Numpy array in python ?**   (1)
    1.To make a Matrix with all element 0
    2.To make a Matrix with all diagonal element 0
    3.To make a Matrix with first row 0
    4.None of the above
b. <u>Shape() function in Numpy array is used to</u>   (1)
    1.Find the shape of the array
    2.Change the shape of the array
    3.Both of the above
    4.None of the above

c. Name two types of else clauses in Python. (1)

d. Create an array of 4x4 with even numbers. (2)

OR

Create 2x4 array with multiples of 4.

e. Write a Python script to read an integer > 1000 and reverse the number. (3)

OR

Write a python script print Fibonacci series' first 20 elements.

f. Write a python program to print the following pattern using nested loops: (3)

987

65

4

g. Give Python code to split a 3x6 arrary (using split method) in to three 3x2 arrays. (4)

OR

Write commands to perform following operations on two 4x4 ndarrays namely P and Q.

i) Adding 10 to P.

ii) Multiplication of two arrays P and Q.

4. <u>**SECTION - C**</u>

a. Explain primary key. (1)

b. Name any two date and time functions of MySql. (1)

OR

Name any two numeric functions of MySql.

c. Give mySql query to add a column Email to the table Employee (1)

d. Keyword "ASC" and "DESC" cannot be used without which clause in Mysql? (1)
a) ORDER BY
b) GROUP BY
c) SELECT
d) HAVING

e. What will be the output of the following MySQL statement? (1)
SELECT account_id, product_id, cust_id
FROM account
WHERE product_id **IN**('sav', 'chd', 'mm');

a) Only those values are selected whose product_id is either 'sav', 'chd', 'mm'

b) Only those values are selected whose product_id is either 'sav''

c) Only those values are selected whose product_id is either 'sav', 'chd'

d) All of the mentioned

f. Consider the following table as given below: (3)

Table : FURNITURE

NO	ITEM NAME	TYPE	DATEOFSTOCK	PRICE	DISCOUNT
1	White Lotus	Double Bed	2002-02-23	3000	25
2	Pink feathers	Baby Cot	2002-01-29	7000	20
3	Dolphin	Baby Cot	2002-02-19	9500	20
4	Decent	Office Table	2002-02-01	25000	30
5	Comfort zone	Double Bed	2002-02-12	25000	30
6	Donald	Baby cot	2002-02-24	6500	15
7	Royal Finish	Office Table	2002-02-20	18000	30
8	Royal tiger	Sofa	2002-02-22	31000	30

(a) To show all the information about the Baby cots from the furniture table.

(b) To list the itemname which are priced at more than 15000 from the furniture table.

(c) To display itemname and dateofstock of those items, in which the discount percentage is more than 25 from the furniture table.

g. Write SQL commands for the following on the basis of the given table: (3)

Table: Dept

Colum Name	Data Type	Size	Constraint	Description
DeptNo	Number	2	PRIMARY	
Dname	VARCHAR2	10	NOT NULL	
Loc	VARCHAR2	10		

Table: Emp

Colum Name	Data Type	Size	Constraint	Description
EmpNo	Number	4	PRIMARY	
Ename	VARCHAR2	10	NOT NULL	
JOB	VARCHAR2	10		
MGR	NUMBER	4		
HIREDATE	DATE			
SAL	NUMBER	(7,2)		
COMM	NUMBER	(7,2)		
DEPTNO	NUMBER	2	FOREIGN KEY	References

Now write MySQL statements:
a) Display all the jobs for salary more than Rs. 4500.
b) Identify the foreign key and the child table.
c) Add not null constraint to MGR column.

h. Consider the following table **Supplier:**   (4)

SCODE	SNAME	CITY	STATE	AMOUNT
1001	RAJESH	BHIKHIWIND	PUNJAB	5000
1002	RAJAT	AMRITSAR	PUNJAB	5400
1003	PUNEET	SONIPAT	HARYANA	6200
1004	RACHNA	FARIDABAD	HARYANA	8400
1005	RAMAN	JAMUNANAGAR	HARYANA	8940
1006	PRAGTI	BISHRAMPUR	CHATTISGARH	4800
1007	PRAHALAD	BABRALA	UTTER PARDESH	3000
1008	KOCHER	LAKHERI	RAJASTHAN	2500

i)   Show sname of suppliers whose name is starting with letter 'P'
ii)   Show sname, city of suppliers who belongs to either 'HARYANA' or 'PUNJAB'
iii) Change the amount to 5000 where scode is 1008.
iv)   Add a new column (COMMISSION DECIMAL (7, 2)) in the above table.

OR

Answer the following:
i) Explain the difference between Unique and Primary Key constraints of MySql.
ii) Explain the difference between DELETE and DROP commands of mySql.

5.   **SECTION-D**

a. Both email attachments and downloaded files can spread malware.   (1)

(i) True   (ii) False

b. Explain Spam.   (1)

c. Explain Phishing.   (1)

d. Internet security is a major issue for many people. The following is a list of typical security issue: (2)

i) pharming   ii) spyware

For each one, describe the security issue and suggest a way of protecting against it.

e. What do you understand by identity theft? (2)

f. Explain the best practices to ensure confidentiality of information (any – 3). (3)

OR

Explain any three social media usage rules.