APPENDIX D

MODEL TEST PAPER (UNSOLVED)

CLASS XII

INFORMATICS PRACTICES (NEW) (065)

TIME: 3 Hrs. M.M: 70

1. (a) Which command is used for installing Pandas? (1)

(b) Define dataframe in Python and also give syntax for creating dataframe. (2)

(c) Name the operations which operate on a dataframe. (1)

(d) How can we print specific number of rows using dataframes? (1)

(e) Write a program to print data from a column and find out the maximum value. (2)

(f) Give the output: (2)

```
p = int(input("Enter any principal amount:")
t = int(input("Enter any time:")
if (t>10):
    si = p*t*10/100
else:
    si = p*t*15/100
print ("Simple Interest = ",si)
```

(g) Write an algorithm or Python program for sorting of data in dataframes. (2)

2. (a) Explain software engineering in brief. (2)

(b) Define waterfall model and compare it with evolutionary model. (3)

(c) Explain delivery models and their types with diagram. (2)

(d) List the difference between traditional approach of software development and agile methods. (2)

(e) Differentiate between Scrum and Pair programming used in agile software development. (4)

3. (a) Write a program to input any number and to check whether the given number is Armstrong or not. (Armstrong 1, 153, etc. 13 = 1, $1^3 + 5^3 + 3^3 = 153$) (2)

(b) Write a program to search for customer name inputted by the user and display customer phone number if the customer name exists in the list. (1)

(c) Give the output: (2)

```
x = [10]
def List_ex():
    x.append(20)
def add_list():
    x=[30,40]
    x.append(50)
    print(x)
list_ex()
print(x)
add_list()
print(x)
```

4. (a) Mr. Ramesh has created a table 'student' with rollno., name, class and section. Now he is confused about setting the primary key. So, identify the primary key column. (2)

(b) Write SQL query to add a column total price with data type numeric and size 10,2 in a table product. (2)

(c) Differentiate between order by and group by command. (1)

(d) (i) Create a table for the following table items: (6)

Column name	Data type	Size	Constraint
Itemno	Number	3	Primary key
Iname	Varchar	15	
Price	Number	10,2	
Quantity	Number	3	

(ii) Insert the following information:

Table: Item

Itemno	Iname	Price	Quantity
101	Soap	50	100
102	Powder	100	50
103	Face cream	150	25
104	Pen	50	200
105	Soap box	20	100

Write queries based on the given table item:

1) Display information for all items.
2) Display item name and price value.
3) Display soap information.
4) Display the item information whose name starts with letter 's'.
5) Display a report with item number, item name and total price (total price = price * quantity). Give the output.
6) Select distinct price from item;
7) Select count (distinct price) from item;

(e) Explain the steps involved in django-based web application. (2)

(f) Write the steps for integrating SQL with Python importing mysql-connector or mysqldb. (2)

5. (a) Define numpy in Python. (1)

(b) Define covariance and correlation in the context of numpy in Python. (1)

(c) Give two methods of pivoting in Pandas. (2)

(d) Differentiate between a bar chart and a histogram. (2)

(e) What will be the output for the code given below: (1)

```
word="aeiouabcd"
print(word[:3]+ word [3:])
```

(f) Why and where do we use numpy arrays instead of Python lists? (1)

(g) Name a few libraries in python used for data analysis. (1)

(h) Write the syntax for 1D array and 2D array declaration using Pandas or numpy. (1)

6. (a) What is matplotlib library? (2)

(b) Plot a bar graph for the given values—[215,130,245,210] (1)

(c) What is the utility of explode()? (1)

(d) What will be the output for the following code: (2)

```
from matplotlib import pyplot as plt
x = [5,2,7]
y = [2,16,4]
plt.plot(x,y)
plt.title('Info')
plt.ylabel('Y axis')
plt.xlabel('X axis')
plt.show()
```

7. (a) What are the different methods of e-waste management? (2)

(b) When did the IT Act come into force? (1)

(c) Briefly explain digital rights management. (2)

(d) What are scams? Explain with a diagram. (2)

(e) What are cyber laws? (1)

(f) Explain the working of biometric machines. (2)