Class XII
INFORMATICS PRACTICES (065)
SAMPLE QUESTION PAPER (2020 - 21)
Marking Scheme

Max. Marks: 70   **Time: 3 hours**

Question No.	Section A	Total
1	i. **True** ii. **False** ½ mark for each correct answer	1
2	plt.title() **1 mark for correct answer**	1
3.	50 1 mark for the correct answer	1
4	print(Sequences.head(4)) 1 mark for the correct usage of head()	1
5	print(S1+S2) 1 mark for the correct print() statement	1
6	histogram 1 mark for the correct answer	1
7	Firewall 1 mark for the correct answer	1

8	column 1 mark for the correct answer	1
9	Bug 1 mark for the correct answer	1
10	Dynamic web page 1 mark for the correct answer	1
11	Aggregate Function 1 mark for the correct answer	1
12	Plagiarism 1 mark for the correct answer	1
13	isnull() 1 mark for the correct answer	1
14	Cookies 1 mark for the correct answer	1
15	c. Avast 1 mark for the correct answer	1
16	spam 1 mark for the correct answer	1
17	Buy environmentally friendly electronics Donate used electronics to social programs Reuse , refurbish electronics Recycling e-waste Any other correct answer to be considered 1 mark for the correct answer	1

18	update 1 mark for the correct answer	1
19	`Select now();` 1 mark for the correct answer	1
20	Switch 1 mark for the correct answer	1
21	Spam or spamming I mark for the correct answer	1
22.(i)	b. `print(df.max())` 1 mark for the correct answer	4

(ii)	a. `df1=df[df['rollno']==4]`
	    `print(df1)`
	
	d. `df1=df[df.rollno==4]`
	     `print(df1)`
	
	½ mark for mentioning option(a)
	
	½ mark for mentioning option(d)	

(iii)	a. both (i) and (ii) 1 mark for stating option "a" as correct answer ½ mark for staing option "b" as correct	
(iv)	**a. d.** `print(df.columns)` 1 mark for the correct answer	
(v)	b. df ['Grade']=['A','B','A','A','B','A'] 1 mark for the correct answer	

23 (i)	**b. Both (iii) and (iv)**
	
	`select name from student where city="Agra" or`
	`city="Mumbai";`
	`or`
		4

select name from student where city IN("Agra",
"Mumbai");

d. Only (iii)
iii. select name from student where city="Agra" or
city="Mumbai";

1 mark for stating option b as correct answer
½ mark for stating d as correct answer

(ii)

b.

Rollno	Name	Class	DOB	Gender	City	Marks
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Moscow	324
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492

1 mark for the correct answer

(iii)

d. Select class, max(marks) from student group
by class;

1 mark for the correct answer

(iv)

b. Both (ii) and (iv)

```
Select gender, average(marks) from student group
by gender where class="XI";
or
Select gender, average(marks) from student group
by gender having class = "XI";
```

1 mark for the correct answer

(v)

b. select name,max(DOB) from student ;

1 mark for the correct answer

	Section B	
| 24 | ```
import pandas as pd
m1=pd.Series([45,65,24,89],index=['term1','term2','term3','term4'])
```<br><br>½ mark for import statement<br>½ mark for usage of Series ()<br>½ mark for stating index as a list<br>½ mark for creating object m1 | 2 |
| 25 | Differences between single row functions and multiple row functions.
(i) Single row functions work on one row only whereas multiple row functions group rows
(ii) Single row functions return one output per row whereas multiple row functions return only one output for a specified group of rows.

OR
The order by clause is used to show the contents of a table/relation in a sorted manner with respect to the column mentioned after the order by clause. The contents of the column can be arranged in ascending or descending order.

The group by clause is used to group rows in a given column and then apply an aggregate function eg max(), min() etc on the entire group.
(any other relevant answer)

Single row v/s Multiple row functions
1 mark for each valid point

Group by v/s Order by
1 mark for correct explanation
1 mark for appropriate example | 2 |

26	```
	i. select round(8459.2654);
	ii.select round(8459.2654,-2);
	``
	
	1 mark each for correct answer of part (i) , (ii)
		2

27	``` i. print(S_amt[S_amt>250]) ii. S_amt.name= 'Furniture' ``` 1 mark each for correct answer of part (i) , (ii)	2
28	This is because the column commission contains a NULL value and the aggregate functions do not take into account NULL values. Thus Command1 returns the total number of records in the table whereas Command2 returns the total number of non NULL values in the column commission.	2

29	```
	a. select substr("Preoccupied", 4);
	   or
	   select substring("Preoccupied", 4);
	   or
	   select mid("Preoccupied",4);
	   or
	   select right(("Preoccupied"", 8);
	
	b. select substr("Preoccupied" ,6,3);
	   or
	   select substring("Preoccupied", 6,3);
	   or
	   select mid(("Preoccupied" ,6,3);
	``
	
	OR
	
	``
	a. select instr 'Preoccupied' , ' 'cup'));
	b. select left 'Preoccupied',4);
	``
	
	1 mark for each correct answer of part (a) , (b)
		2

30	```
	i. classframe['Activity']=['Swimming','Dancing
	      ','Cricket', 'Singing']
	ii. classframe.loc['St5']=[1,'Mridula', 'X',
	      'F', 9.8, 'Science']
	``
		2

	1 mark for each correct answer	
31	a. SMTP: Simple Mail Transfer Protocol b. POP: Point to Point Protocol c. FTP: File Transfer Protocol d. VoIP: Voice over Internet Protocol ½ marks for each correct full form	2
32	The continuous use of devices like smartphones, computer desktop, laptops, head phones etc cause a lot of health hazards if not addressed. These are: i. Impact on bones and joints: wrong posture or long hours of sitting in an uncomfortable position can cause muscle or bone injury. ii. Impact on hearing: using headphones or earphones for a prolonged time and on high volume can cause hearing problems and in severe cases hearing impairments. iii. Impact on eyes: This is the most common form of health hazard as prolonged hours of screen time can lead to extreme strain in the eyes. iv. Sleep problem: Bright light from computer devices block a hormone called melatonin which helps us sleep. Thus we can experience sleep disorders leading to short sleep cycles. 2 marks for any two correct points	2
33	We call this type of activity as Digital Footprints Risk involved : It includes websites we visit emails we send, and any information we submit online, etc., along with the computer's IP address, location, and other device specific details. Such data could be used for targeted advertisement or could also be misused or exploited. 1 mark for naming the activity 1 mark for mentioning any one risk .	2
34	a. will give the output as: `[20,40,90,110,20,40,90,110]` b. will give the output as	3

	0 40 1 80 2 180 3 220 Justification: In the first statement x represents a list so when a list is multiplied by a number, it is replicated that many number of times. The second y represents a series. When a series is multiplied by a value, then each element of the series is multiplied by that number. 1 mark for output of list multiplication 1 mark for output of Series multiplication 1 mark for the justification		
35	Identity theft is the crime of obtaining the personal or financial information of another person for the sole purpose of assuming that person's name or identity to make transactions or use it to post inappropriate remarks , comments etc. Example: Alex likes to do his homework late at night. He uses the Internet a lot and also sends useful data through email to many of his friends. One Day he forgot to sign out from his email account. In the morning, his twin brother, Flex started using the computer. He used Flex's email account to send inappropriate messages to his contacts Or any other relevant example 1 ½ mark for explaining Identity theft 1 ½ nark for suitable example OR Net Ettiquets refers to the proper manners and behaviour we need to exhibit while being online. These include : 1. No copyright violation: we should not use copyrighted materials without the permission of the creator or owner. We should give proper credit to owners/creators of open source content when using them.	3	

	2. Avoid cyber bullying: Avoid any insulting, degrading or intimidating online behaviour like repeated posting of rumours, giving threats online, posting the victim's personal information, or comments aimed to publicly ridicule a victim. Or any other relevant answer. 1 marks for deifition of Net Ettiquettes 1 mark eachfor the example with explanation.	

36	```import matplotlib.pyplot as plt plt.plot([2,7],[1,6]) plt.show()``` **alternative answer** ```import matplotlib.pyplot as plt a = [1,2,3,4,5,6] b = [2,3,4,5,6,7] plt.plot (a,b)``` **1 mark for the import statement**
	1 mark for appropriate usage of plot()
	1 mark for show()
	
	OR
	
	```import matplotlib.pyplot as plt Classes = ['VII','VIII','IX','X'] Students = [40,45,35,44] plt.bar(classes, students) plt.show()```
	
	1 mark for the import statement
	1 mark for appropriate usage of pie()
	1 mark for show()
		3

37	```a. select Type, avg(Price) from Vehicle group by Type having Qty>20; b. select Company, count(distinct Type) from Vehicle group by Company; c. Select Type, sum(Price* Qty) from Vehicle group by Type;```	3

	a. ½ mark for the Select with avg(), ½ mark for the having clause b. ½ mark for the Select with count() , ½ mark for group by clause c. ½ mark for the Select with sum() , ½ mark for the group by clause	
| 38 | ```
import pandas as pd
d1={'B_NO':[1,2,3,4],
    'Name':["Sunil Pillai","Gaurav
Sharma","Piyush Goel","Kartik
Thakur"],'Score1':[90,65,70,80],
'Score2':[80,45,95,76]
        }
df=pd.DataFrame(d1)
print(df)
df['Total'] = df['Score1']+ df['Score2']
```<br>**Alternative Answer**<br>Scheme<br>```
df['Total'] = sum(df['Score1'], df['Score2'])
print(df)
print("Maximum scores are : " ,
max(df['Score1']), max(df['Score2']))
```<br><br>```
1 mark for import statement
2 marks for creating the dataframe
1 mark for creating column Total to hold the sum
of scores
1 mark for displaying highest scores in Score1 &
Score2
``` | 5 |
| 39 | i) monthname(date(now()))
ii) trim("   Panaroma   ")
iii) dayname(date(dob))
iv)instr(name, fname)
v) mod(n1,n2)

1 mark for each correct answer

<div align="center">**OR**</div>

i) Select sname, round(bonus,0) from Salesman; | 5 |

```
ii) Select instr(Sname, "ta") from Salesman;
iii) Select mid(Sname,2,4) from Salesman;
alternative answer
iii) Select Substring(Sname,2,4) from Salesman;
iv) Select monthname(DateofJoin) from Salesman;
v) Select dayname(DateofJoin) from Salesman;
```

1/2 mark each for correct usage of Select and round()

1/2 mark each for correct usage of Select and instr()

1/2 mark each for correct usage of Select and substr()

1/2 mark each for correct usage of Select and monthname()

1/2 mark each for correct usage of Select and dayname()

Note : Instead of substr() , substring() may be accepted as correct

40.	i) Most suitable layout according to distance is : 1 mark for an appropriate cable layout ii) Star Topology 1 mark for correct topology iii) Broadband. 1 mark for suggesting suitable technology	5

| | iv). a. Not required. Repeaters may be skipped as per above layout (because distance is less than 100 m)

    b. In every wing

½ mark for placement of repeater ½ mark for placement of hub / switch

iv) Radio Waves

1 mark for the appropriate connectivity mode between HQ and other offices | |