INDIAN SCHOOL AL WADI AL KABIR

INFORMATICS PRACTICES (065)(2020-2021)

SAMPLE PAPER 5

Max Marks: 70 **Time: 3 hrs**

	Part – A	
	Section - I **Attempt any 15 questions from questions 1 to 21**	
1	State whether True or False : i. E –waste is hazardous if not handled carefully. _____ ii. Free software is same as freeware. _____	1
2	Fill in the blanks : The command used to display graph is _____ a. plt.show() b. plt.plot() c. plt.xlabel() d. plt.title()	1
3.	Write the output of the following SQL command. select round(123.58,1); a. 123.6 b. 124 c. 123.5 d. 123	1
4	Given a Pandas series called Sequences, the command which will display the last 3 rows is_____. a. print(Sequences.tail(3)) b. print(Sequences.Tail(3)) c. print(Sequences.tails(3) d. print(Sequences.tail())	1

5.	Given the following Series S1: S1 A 10 B 20 C 30 D 40 Write the command to double the value in series and store in another series named s2	1
6	Axes of a plot can be labelled using_____and_____functions.	1
7	Web page constitutes the _____	1
8	Which method is used to access vertical subset of a dataframe.? (i) Iterrows() (ii) Iteritems() (iii) Itertuples()	1
9	Which of the following is not a network device : Repeater, hub, TCP, switch	1
10	Website is collection of_____.	1
11	The count() function in MySql is an example of_____. a. Math function b. Text function c. Date Function d. Aggregate Function	1
12	Wi-Fi, infrared, and Bluetooth is an example of_____network.	1
13	The command to install pandas is _____	1
14	I can share hardware. I can share software. I facilitates you. Who am I ?	1

15	Which amongst the following is not used to surf on network? a. Internet explorer b. Firefox c. Avast d. Edge	1
16	Tricking people through authentic –looking emails or websites is called _____	1
17	Unsolicited commercial email is known as_____.	1
18	The_____command can be used to arrange data in some order in a table in SQL.	1
19	Write the SQL command that will display the year from date '2020-09-30'	1
20	_____is example of network of networks .	1
21.	Online personal account, personal website is an example of_____.	1
	Section -II **Both the case study based questions (22 & 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark.**	
22.	Consider the following Data Frame **df** and answer **any four out of five from** (i) to (v) Name Rollno English Hindi Maths Ssc Science 0 Anita 1 55 45 87 67 70 1 Sunita 2 67 65 90 87 56 2 Radha 3 78 76 98 90 78 3 Anis 4 98 87 78 45 87 4 Kaushal 5 45 58 90 69 98	
(i)	Write statement to display name and rollno only.	1
(ii)	The teacher needs to know the marks scored by the student with roll number 4. Help her to identify the correct set of statement/s from the given options : a. df1=df[df['rollno']==4] print(df1)	1

<table>
<tr><td></td><td>b. df1=df[rollno==4] print(df1)
c. df1=df[df.rollno=4] print(df1)
d. df1=df[df.rollno==4] print(df1)</td><td></td></tr>
<tr><td>iii)</td><td>Which of the following statement/s will delete column ‘Total’ from the dataframe?

i.df.pop(‘Total’) ii. del df[‘Total’]
iii.del (df.Total) iv. df.del(‘Total’)

Choose the correct option:
a. both (i) and (ii)
b. only (ii)
c. (i), (ii) and (iii)
d. (i), (ii) and (iv)</td><td>1</td></tr>
<tr><td>(iv)</td><td>Which of the following command will display the column labels of the DataFrame?

a. print(df.columns())
b. print(df.column())
c. print(df.column)
d. print(df.columns)</td><td>1</td></tr>
<tr><td>(v)</td><td>a. Write command to add total column to dataframe named ‘total’ which stores the total of all the subjects mentioned in the df.</td><td>1</td></tr>
<tr><td>23</td><td>Consider the table TRAVEL given below:

<table><tr><th>NO</th><th>NAME</th><th>TDATE</th><th>KM</th><th>CODE</th><th>NOP</th></tr><tr><td>101</td><td>Janish Kin</td><td>2015–11–13</td><td>200</td><td>101</td><td>32</td></tr><tr><td>103</td><td>Vedika Sahai</td><td>2016–04–21</td><td>100</td><td>103</td><td>45</td></tr><tr><td>105</td><td>Tarun Ram</td><td>2016–03–23</td><td>350</td><td>102</td><td>42</td></tr><tr><td>102</td><td>John Fen</td><td>2016–02–13</td><td>90</td><td>102</td><td>40</td></tr><tr><td>107</td><td>Ahmed Khan</td><td>2015–01–10</td><td>75</td><td>104</td><td>2</td></tr><tr><td>104</td><td>Raveena</td><td>2016–05–28</td><td>80</td><td>105</td><td>4</td></tr></table></td><td></td></tr>
</table>

(i)	Write query to give the output as: **NO NAME TDATE KM** 101 Janish Kin 2015–11–13 200 105 Tarun Ram 2016–03–23 350 (A) Select * from travel where km>200; (B) Select * from travel where km>=200; (C) Select no,name, tdate,km from travel where km>=200; (D) Select no,name, tdate,km from travel where km between 200 and 350;	1
(ii)	Write query to display maximum km from travel table.	1
(iii)	Akhil has given the following command to arrange the data in ascending order of date . Select * from travel where order by tdate; but he is not getting the desired result. Help him by writing the correct command. a. Select * from travel where order by tdate; b. Select * from travel order by tdate; c. Select * from travel in ascending order; d. Select tdate from travel order by tdate;	1
iv)	Write the query to count the number of codes in each code type from travel table.? i. select count(code) from travel ; ii select code,count(code) from travel group by code; iii. select code,count(distinct code) from travel; iv. select code,count(distinct code) from travel group by code; Choose the correct option: a. Both (ii) and (iii) b. Both (ii) and (iv) c. Both (i) and (iii) d. Only (ii)	1

(v)	Help Ritesh to write the command to display the name of the traveler whose travel date is in year 2016? a. Select name,tdate from travel where year(tdate)=2016 ; b. Select name,tdate from travel where tdate=2016; c. Select name,tdate from travel where year(tdate)= =2016; d. Select name,max(tdate) from travel ;	1
	Part – B	
	Section – I	
24	Consider a given Series , S1: 100 500 101 500 102 500 103 500 104 500 Write a program in Python Pandas to create the series.	2
25	State any two differences between where and having clause in SQL. Give example of each **OR** What is the difference between the order by and group by clause when used along with the **select** statement. Explain with an example.	2
26	How are NULL values treated by aggregate functions in SQL. Give Example.	2
27	Consider the following Series object, s Apple 10 Mango 20 Banana 30 Orange 40 i. Write the command which will display only apple. ii. Write the command to increase price of all fruits by 10.	2

<table>
<tr><td>28</td><td>Kaushal writes the following commands with respect to a table student having fields, name,rollno, marks and records of 5 students.
Command1 : Select count(marks) from student;
He gets the output as 4 for the command .Explain the output with justification.</td><td>2</td></tr>
<tr><td>29</td><td>Consider the following SQL string: “Informatics”

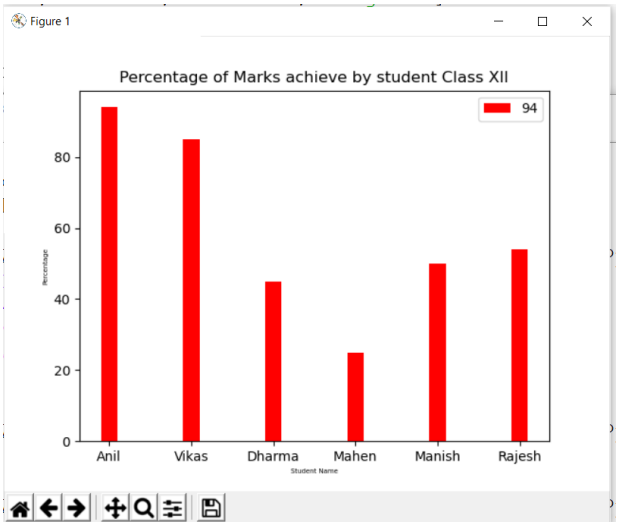
a. Write commands to display “form”
b. Display the string in capital letters.

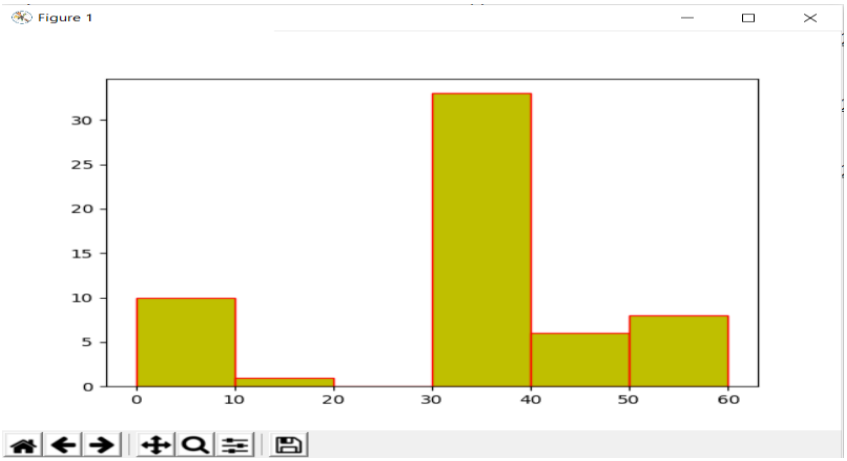
OR

Considering the same string “Informatics” Write SQL commands to display:

a. the position of the substring ‘matics’ in the string .
b. the last 4 letters of the string</td><td>2</td></tr>
<tr><td>30</td><td>Consider the following DataFrame, class1

<table>
<tr><th></th><th>Name</th><th>Rollno</th><th>English</th><th>Hindi</th><th>Maths</th><th>Ssc</th><th>Science</th></tr>
<tr><td>0</td><td>Anita</td><td>1</td><td>55</td><td>45</td><td>87</td><td>67</td><td>70</td></tr>
<tr><td>1</td><td>Sunita</td><td>2</td><td>67</td><td>65</td><td>90</td><td>87</td><td>56</td></tr>
<tr><td>2</td><td>Radha</td><td>3</td><td>78</td><td>76</td><td>98</td><td>90</td><td>78</td></tr>
<tr><td>3</td><td>Anis</td><td>4</td><td>98</td><td>87</td><td>78</td><td>45</td><td>87</td></tr>
<tr><td>4</td><td>Kaushal</td><td>5</td><td>45</td><td>58</td><td>90</td><td>69</td><td>98</td></tr>
</table>
Write code to display the dataframe ‘class1’ row-wise.</td><td>2</td></tr>
<tr><td>31</td><td>Expand the following terms related to Computer Networks:
a. URL
b. ISP
c. FTP
d. HTTP</td><td>2</td></tr>
<tr><td>32</td><td>List any two health hazards related to excessive use of Technology.</td><td>2</td></tr>
</table>

33	Following acts are considered : • Posting any kind of humiliating content about the victim. • Hacking the victim's account. • Sending or posting vulgar messages online. • Threatening to commit acts of violence. • Stalking by means of calls, messages, etc. • Threats of child pornography. What is the correct word for the above statements mentioned? What action individual must take if above mentioned things happened ?	2
	Section -II	
34	Consider two objects x and y. x is a list whereas y is a Series. Both have values 20, 40,90, 110. What will be the output of the following statement considering that the above objects have been created already a. print (x*y) This statement is correct or not ? What will be the output. Give reason for your answer.	3
35	What do you mean by cyber security? How one can protect His/Her data. **OR** What do you understand by Net Ettiquetes? Explain any two such ettiquetes.	3
36	Consider the following graph . Write the code in python to draw bar graph to show percentage of following students.  OR	3



Write code in python to show the data using histogram.

37 A relation Products is given below : 3

V_no	Type	Company	Price	
	Qty AW125	Wagon	Maruti	
	250000	25		
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

Write SQLcommands to:

a. Display the MINMUM price of each type of vehicle having quantity more than 20.

b. Display the Count of type of vehicles manufactured by each company.

c. Display thetype and total price((price*qty) of all the types of vehicles in ascending order of type.

Section - III

38	Write a program in Python Pandas to create the following DataFrame Bank from a Dictionary: C_NO Name Balance 101 Sunita 9000 102 Manish Sharma 6500 103 Ajay Goel 70000 104 Aditya Thakur 800000 Perform the following operations on the DataFrame : 1)Add a new column interest in dataframe (interest rate is 5%) 2)Display the customers having balance more than 50000.	5
39.	Write the SQL functions which will perform the following operations: i To display the day of the month of the current date . ii To display the length of string , " hello ". iii To display the name of the day eg, Friday or Sunday from your date of birth, dob. **iv.** To display the string in upper case 'I love india' **v.** To compute the 2^3 using sql function. **O** **R** Consider a table SALES with the following data: SNO SNAME SALARY BONUS DATE OF JOIN A01 Beena Mehta 30000 45.23 29-10-2019 A02 K. L. Sahay 50000 25.34 13-03-2018 B03 Nisha Thakkar 30000 35.00 18-03-2017 B04 Leela Yadav 80000 NULL 31-12-2018 C05 Gautam Gola 20000 NULL 23-01-1989 C06 Trapti Garg 70000 12.37 15-06-1987 D07 Neena Sharma 50000 27.89 18-03-1999 Write SQL queries using SQL functions to perform the following operations: a) Display salesman name and salary of salesman assuming the salary in the table is for one month and display the salary for complete year. . b) Display the first four characters of salesman names. c) Display the name of salesman in upper case. d) Display the year name for the date of join of salesman Display the name of the weekday for the date of join of salesman whose year is 2019	5

40	KVS organization is setting up the network between the different wings. There are 4 Wings names as Science(S), Junior(J), Admin(A) and Hostel(H). Distance between various wings in meters. A TO S 100 A TO J 200 A TO H 400 S TO J 300 S TO H 100 J TO H 450 Number of computers in each wing Senior 200 Admin 10 Junior 50 Hostel 20 i. Suggest a suitable Topology for networking the computer of all wings. ii. Name the wing where the server is to be installed. Justify your answer iii. Suggest the placement of Hub/Switch/Repeater in the network iv. Mention an economic technology to provide internet accessibility to all wings v. Suggest the type of Network LAN/MAN/WAN.	5