



**INDIAN SCHOOL AL WADI AL KABIR**  
**INFORMATICS PRACTICES (065)( 2020-2021)**

**SAMPLE PAPER 2**

Part – A		
Section – I		
1	What is a cyber attack?	1
2	Device which is used to connect several nodes to form a network and redirected the received information only to the intended nodes	1
3	A SQL command used to remove rows from a SELECT query.	1
4	What do you mean by degree of a relation?	1
5	Which function is used to draw line chart and which method and value will you use to draw (.....)type of line .	1
6	What data type is the object below ? L = [1, 23, 'hello', 1]. a) list b) dictionary c) array d) tuple	1
7	_____ refers to any information about you or created by you that exists in digital form either online or on an electronic storage device.	1
8	Hardware or software that prevents unauthorised access to or from a network	1
9	Which of the following will run without errors? a) round(45.8) b) round(6352.898,2,5) c) round() d) round(7463.123,2,1)	1
10	Give an Example of two DDL commands.	1
11	Consider the following python code and write the output : 1 import pandas as pd K=pd.Series([2, 4, 6, 8, 10]) s = pd.Series(K) print (s)	1
12	Write the name of any two aggregate functions in MySQL.	1
13	Define the term Plagiarism.	1
14	Which keyword is used to rename the resulting attribute after the application of the aggregation function? a) rename b) as c) replace d) to	1

15	<pre>import matplotlib.pyplot as plt subjects = ['Civil','Mechanical','Electrical','CSE'] numberofstudents = [8,18,36,24] Complete the above code to plot bar graph (subject on x-axis and numberofstudents on yaxis) and display it.</pre>	1																																																																													
	<p style="text-align: center;">Section -II</p> <p>Both the case study-based questions (22 &amp; 23 ) are compulsory. Each sub question carries 1 mark .</p>																																																																														
16	<p>Consider the dataframe df :</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Name</th> <th>Phy</th> <th>Chem</th> <th>Math</th> <th>IP</th> </tr> </thead> <tbody> <tr> <td>Kamla</td> <td>50</td> <td>80</td> <td>60</td> <td>80</td> </tr> <tr> <td>Seema</td> <td>40</td> <td>40</td> <td>80</td> <td>90</td> </tr> <tr> <td>Suresh</td> <td>80</td> <td>50</td> <td>80</td> <td>70</td> </tr> <tr> <td>Santosh</td> <td>65</td> <td>60</td> <td>70</td> <td>70</td> </tr> </tbody> </table> <p>i. Add a column total to df .  ii. display the details of “suresh” and “santhosh “ using iloc.  iii. Delete the details math marks of all students  iv. sort df in thw descending order of total</p>	Name	Phy	Chem	Math	IP	Kamla	50	80	60	80	Seema	40	40	80	90	Suresh	80	50	80	70	Santosh	65	60	70	70	4																																																				
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17	<p>Consider the following table and answer the Queries:-</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="7" style="text-align: center;">Emp</th> </tr> <tr> <th>EmpID</th> <th>EmpName</th> <th>Designation</th> <th>DOJ</th> <th>Sal</th> <th>Comm</th> <th>DeptID</th> </tr> </thead> <tbody> <tr> <td>8369</td> <td>SMITH</td> <td>CLERK</td> <td>18-12-1990</td> <td>1050.00</td> <td>200.00</td> <td>10</td> </tr> <tr> <td>8499</td> <td>ANYA</td> <td>SALESMAN</td> <td>20-02-1991</td> <td>1600.00</td> <td>300.00</td> <td>20</td> </tr> <tr> <td>8566</td> <td>MAHADEVAN</td> <td>MANAGER</td> <td>02-04-1991</td> <td>2985.00</td> <td>NULL</td> <td>30</td> </tr> <tr> <td>8654</td> <td>MOMIN</td> <td>SALESMAN</td> <td>28-09-1991</td> <td>1250.00</td> <td>400.00</td> <td>20</td> </tr> <tr> <td>8698</td> <td>BINA</td> <td>MANAGER</td> <td>05-01-1991</td> <td>2850.00</td> <td>250.00</td> <td>30</td> </tr> <tr> <td>8882</td> <td>SHIVANSH</td> <td>MANAGER</td> <td>09-06-1991</td> <td>2450.00</td> <td>NULL</td> <td>10</td> </tr> <tr> <td>8888</td> <td>SCOTT</td> <td>ANALYST</td> <td>09-12-1992</td> <td>3000.00</td> <td>150.00</td> <td>10</td> </tr> <tr> <td>8839</td> <td>AMIR</td> <td>PRESIDENT</td> <td>18-11-1991</td> <td>5000.00</td> <td>NULL</td> <td>20</td> </tr> <tr> <td>8844</td> <td>KULDEEP</td> <td>SALESMAN</td> <td>08-04-1992</td> <td>1500.00</td> <td>0.00</td> <td>30</td> </tr> </tbody> </table> <p>a) Write a query to display the name of employee whose name contains “A” as third alphabet in ascending order of employee names.  b) Show the average salary for all departments with more than 5 working people.  c) List the count of Employees grouped by DeptID.  d) Display the maximum salary of employees in each Department.</p>	Emp							EmpID	EmpName	Designation	DOJ	Sal	Comm	DeptID	8369	SMITH	CLERK	18-12-1990	1050.00	200.00	10	8499	ANYA	SALESMAN	20-02-1991	1600.00	300.00	20	8566	MAHADEVAN	MANAGER	02-04-1991	2985.00	NULL	30	8654	MOMIN	SALESMAN	28-09-1991	1250.00	400.00	20	8698	BINA	MANAGER	05-01-1991	2850.00	250.00	30	8882	SHIVANSH	MANAGER	09-06-1991	2450.00	NULL	10	8888	SCOTT	ANALYST	09-12-1992	3000.00	150.00	10	8839	AMIR	PRESIDENT	18-11-1991	5000.00	NULL	20	8844	KULDEEP	SALESMAN	08-04-1992	1500.00	0.00	30	4
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Part – B																											
Section – I																											
18	Suppose a data frame contains information about student having columns rollno, name, class and section. Write the code for the following: (i) Add one more column as fee .and add values (ii) Write python code to delete column fee of data frame.	2																									
19	Why is a switch called an intelligent hub?	2																									
20	Table : STUDENT <table border="1"> <thead> <tr> <th>ROLLNO</th> <th>NAME</th> <th>MARK</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAM</td> <td>65</td> </tr> <tr> <td>2</td> <td>REENA</td> <td>NULL</td> </tr> <tr> <td>3</td> <td>FRANK</td> <td>89</td> </tr> </tbody> </table> Write the output of the following: i. SELECT COUNT(MARK) FROM STUDENT WHERE MARK IS NULL; ii. SELECT AVG(MARK) FROM STUDENT;	ROLLNO	NAME	MARK	1	SAM	65	2	REENA	NULL	3	FRANK	89	2													
ROLLNO	NAME	MARK																									
1	SAM	65																									
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21	Write attributes for the following: i. To find the number of elements in a series S ii. To display the values of a series as a ndarray	2																									
22	Hitesh wants to display the last four rows of the dataframe df and has written the following code : df.tail() But last 5 rows are being displayed. Identify the error and rewrite the correct code so that last 4 rows get displayed.	2																									
23	Shyam has received an unknown call stating that he won prize money of Rs. 5 lacs, and the caller saying to pay Rs. 5000/- as a processing fee to get this prize money. You are requested to help him to deal with this situation.	2																									
24	Write the command using Insert () function to add a new column in the last place(3rd place) named “Salary” from the list Sal=[10000,15000,20000] in an existing dataframe named EMP already having 2 columns.	2																									
25	Consider the following Teacher table: Write SQL commands for (i) and output for (ii). <table border="1"> <thead> <tr> <th>Tid</th> <th>TName</th> <th>Department</th> <th>Salary</th> <th>Noof Periods</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>Joseph</td> <td>Physics</td> <td>45000</td> <td>25</td> </tr> <tr> <td>101</td> <td>Lakshmi</td> <td>Hindi</td> <td>55000</td> <td>25</td> </tr> <tr> <td>102</td> <td>Neelu</td> <td>Chemistry</td> <td>66000</td> <td></td> </tr> <tr> <td>103</td> <td>John</td> <td>Physics</td> <td>40000</td> <td>25</td> </tr> </tbody> </table> (i) To display the details of Teacher table in ascending order of Salary. (ii) SELECT avg(NoofPeriods) from Teacher;	Tid	TName	Department	Salary	Noof Periods	100	Joseph	Physics	45000	25	101	Lakshmi	Hindi	55000	25	102	Neelu	Chemistry	66000		103	John	Physics	40000	25	2
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26	Consider the string “informatics” i. Write a command in sql to get “form “ as the output.	2																									

	ii. write command to find the number of characters in the above string.																									
27	Explain copyrights?	2																								
Section II																										
28	<p>Given a data frame namely Fruits is given below(fruit names are row labels)</p> <table border="1"> <thead> <tr> <th></th> <th>Color</th> <th>Count</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>Apple</td> <td>Red</td> <td>3</td> <td>120</td> </tr> <tr> <td>Apple</td> <td>Green</td> <td>9</td> <td>110</td> </tr> <tr> <td>Pear</td> <td>Red</td> <td>25</td> <td>125</td> </tr> <tr> <td>Pear</td> <td>Green</td> <td>26</td> <td>150</td> </tr> <tr> <td>Lime</td> <td>Green</td> <td>99</td> <td>70</td> </tr> </tbody> </table> <p>Write code statement to</p> <p>(a) Find all rows with label "Apple". Extract all columns</p> <p>(b) List only the columns Count and Price using loc</p> <p>(c) List only rows with labels 'Apple' and 'Pear' using loc</p>		Color	Count	Price	Apple	Red	3	120	Apple	Green	9	110	Pear	Red	25	125	Pear	Green	26	150	Lime	Green	99	70	3
	Color	Count	Price																							
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29	Explain cyber crime? What are the different cyber crimes?	3																								
30	Create an ndarray containing 16 values. Write the code and plot Cumulative histogram this array along with dataset 78 72 69 81 63 67 65 75 79 74 71 83 71 79 80 69	3																								
31	<p>Write an SQL query to create the table 'Menu' with the following structure.</p> <p>Field Type Constraint</p> <p>ItemCode Varchar(5) Primary Key</p> <p>ItemName Varchar(20) Default 'CPU'</p> <p>Category Varchar(20) Check either Software or Hardware</p> <p>Price Decimal(5,2) Greater than 1000.</p>	3																								
Section -III																										
32	<p>i. Create a series S with the following list L : [5,10,15,20,25]</p> <p>Write a statement to assign the series as a,b,c,d,e index explicitly</p> <p>ii. Display the values which are greater than or equal to 20.</p> <p>iii. Display the values 15 and 20 using iloc .</p> <p>iv. Display the values 10 and 15 using loc.</p> <p>v. delete the value 15 from the series S.</p>	5																								

33

Answer the following on the basis of table STUDENT.

5

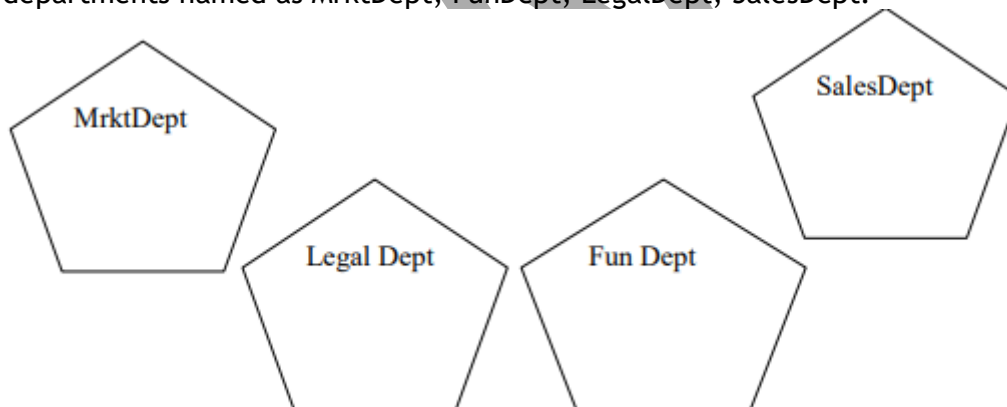
No	Name	Stipend	Stream	AvgMark	Grade	Class
1	Karan	400.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12C
5	Sabina	500.00	Non-Medical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Non-Medical	88.5	A	12A
9	Vikas	500.00	Non Medical	92.0	A	12A
10	Mohan	300.00	Commerce	67.5	C	12C

- i) To list the names of those students who are in class 12 sorted by stipend
- ii) Select all the Non medical stream from STUDENT
- iii) List all students sorted by Avgmark in descending order
- iv) Display a report listing name, stipend, stream and amount of stipend received in a year assuming that the stipend is paid every month  
Write an output of the following:
- v) `SELECT TRUNCATE(Avgmark,2) from student where avgmark=75;`

34

SunRise Pvt. Ltd. is setting up the network in the Ahmadabad. There are four departments named as MrktDept, FunDept, LegalDept, SalesDept.

5



Distance between various buildings is given as follows:

MrktDept to FunDept	80 m
MrktDept to LegalDept	180m
MrktDept to SalesDept	100 m
LegalDept to SalesDept	150 m
LegalDept to FunDept	100 m
FunDept to SalesDept	50 m

Number of Computers in the buildings:

MrktDept	20
LegalDept	10
FunDept	08
SalesDept	42

- i) Suggest a cable layout of connections between the Departments and specify topology.
- ii) Suggest the most suitable building to place the server with a suitable reason.
- iii) Suggest the placement of i) modem ii) Hub /Switch in the network.
- iv) The organization is planning to link its sale counter situated in various part of the same city/ which type of network out of LAN, WAN, MAN will be formed? Justify.
- v) Suggest the place to install a repeater.