D.A.V. PUBLIC SCHOOLS, CG ZONE

SAMPLE PAPER 5 2023-2024

INFORMATICS PRACTICES (065)

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

General Instructions:

    1. This question paper contains five sections, Section A to E.
    2. All questions are compulsory.
    3. Section A has 18 questions carrying 01 mark each.
    4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
    5. Section C has 05 Short Answer type questions carrying 03 marks each.
    6. Section D has 02 Long Answer type questions carrying 04 marks each.
    7. Section E has 03 questions carrying 05 marks each.
    8. All programming questions are to be answered using Python Language only.

	SECTION – A	
1.	Central computer which is powerful than another computer in the network is called as a. Clint b. Server c. Hub d. Switch	1
2.	A software company purchases new computers every year and discards the old ones into the local dumping yard. Write the name of the most appropriate category of waste that the organisation is creating every year, out of the following options. a. Business waste b. Commercial waste c. Solid waste d. E-Waste	1
3.	Most appropriate one for social media account from the following is _____. a. intellectual property b. internet property c. digital property d. personal property	1
4.	Predict the output of the following query: **SELECT ROUND(15.67258,LENGTH("nt"));** a.15.67 b. 10.0 c. 15.672 d.15.6	1
5.	Which of the following function is a text function. a. MOD( ) b. MID( ) c.POW( ) d. SQRT( )	1
6.	Which of the following is a disadvantage of 'open source' software? a. High quality software with lots of feature b. You can edit the source code to customise it. c. May not have been tested as much as proprietary software, so might have bug. d. Cost-efficiency	1

7.	Select the correct statement to import STUD.CSV file to a dataframe df.	1
	a. df.to_csv("STUD.CSV")	
	b. df.from,_csv("STUD.CSV")	
	c. df.read_csv("STUD.CSV")	
	d. df.by_csv("STUD.CSV")	

8.	Raju needs to display the average marks of students from each class which have more than 35 students. Which of the following is a correct query to perform the given task?
	
	a. SELECT CLASS, AVG(MARK) FROM STUD WHERE COUNT(*) > 35 GROUP BY CLASS;
	b. SELECT CLASS, AVG(MARK) FROM STUD HAVING COUNT(*) > 35 GROUP BY CLASS;
	c. SELECT CLASS, AVG(MARK) FROM STUD GROUP BY CLSSS WHERE COUNT(*) > 35;
	d. SELECT CLASS, AVG(MARK) FROM STUD GROUP BY CLSSS HAVING COUNT(*) > 35;
		1

9.	Predict the output of the following query SELECT UCASE(RIGHT("I Love India",5)) a. LOVE b. INDIA c.Love d. India	1
10.	The axis 1 identifies a dataframe's _____. a. rows b. columns c.values d. datatype	1
11.	With reference to SQL, identify the invalid data type. a. Date b. Integer c.Varchar d.Month	1
12.	What will happen if you multiply a series object with 2. a. Gives an error message b.All the data values become NaN. c. All the data values get multiplied with 2 d. All the data values become 0 (Zero).	1
13.	Which of the following is not a network connectivity device? a. Hub b. Graphic card c.Switch d.Router	1
14.	Identify the invalid pair of SQL function. a. UCASE and UPPER b. LCASE and LOWER c. MID and SUBSTR d. LEFT and RIGHT	1
15.	The first page in a website is known as a. webserver b. web hosting c.initial page d. home page	1
16.	Which of the following is not a cyber crime? a. Hacking b. Phishing c.child pronography d.Downvote a social post	1
17.	**Assertion :** Script play an important role in dynamic webpage. **Reason :** Script are embedded codes within web pages, that execute at the client's browser and make the web page look different. a. Both A and R are true and R is the correct explanation for A b. Both A and R are true and R is not the correct explanation for A c. A is True but R is False d. A is false but R is True	1

18.	**Assertion :** A dataframe is a 2D datastructure which is value mutable and size mutable.	1
	Reason : All changes occur in-place in a dataframe	
	a. Both A and R are true and R is the correct explanation for A	
	b. Both A and R are true and R is not the correct explanation for A	
	c. A is True but R is False	
	d. A is false but R is True	

	SECTION – B	
19.	Write any to difference between Static web page and Dynamic web page.	2
	OR	
	Rohit type the URL in the address bar of his web browser and he got an error 404. What may be the reason and also suggest how to resolve this error.	
20.	The python code written below has syntactical errors. Rewrite the correct code and underline the corrections made.	2
	Import pandas as pd	
	d=Input('Enter your string')	
	S=pd.series(list(d))	
	Print(S)	
21.	Write suitable SQL queries for the following:	2
	a. To display day name of current date.	
	b. Remove additional space in the beginning and end of the string variable **str**.	
22.	Predict the output of the given Python code:	2
	import pandas as pd	
	d={'Roll':[10,11,15,20],'Name':['Ayush','Vinayak','Bhawna','Mokshika']}	
	df=pd.DataFrame(d)	
	print(df)	

23.	Match the following	2

a. Pligriarism	i. Faker by offering special reward or money price ask personal information such as bank account.
b. Hacking	ii. Copy and paste information from internet into your report and organise it.
c. Digital Footprint	iii.The trail that is created when a person use the internet.
d. Credit card fraud	iv. Bering into computer to read private email or other files.

24.	Complete the given Python code to get the required output as: **Science**	2
	_____pandas as_____	
	dic={'Ramesh':{'Roll':7110,'Subject':'Science'},'Rakesh':{'Roll':7112,'Subject':'Maths'}}	
	df=pnd.DataFrame(_____)	
	print(df['Ramesh'][_____])	
25.	The table :Student is having columns Name,Class and Marks. Is the use of aggregate function count(Marks) and count(*) will give same output? Justify your answer.	2

26.	Table:EMP	3

Based on the SQL table EMP, write suitable queries for the following:
a) Display department wise average salary.
b) Display the name of employee who got highest salary.
c)Display the month name of joining for each employee.

OR

Predict the output of the following queries based on the table EMP

a) select ucase(ename),sal from emp order by dept;

b) select concat(left(ename,2),day(doj)) as 'pass_id' from emp where dept=8;

c) select sum(sal) from emp group by dept order by dept;

27.	Create a DataFrame in Python from the given dictionary and also write the output: Sales={'Name':['Ruchika','Neha','Manan'], 'Marks':[480,485,499]}	3

28.	Write MySQL statements for the following: i. To create a database named Book. ii. To create a table named **Author** based on the following specification:	3

Column Name	Data Type	Constraints
Author_ID	Int	Primary Key
Author_name	Varchar(20)	

29.	Answer the following questions given for three different situations of a student Rahul while using the internet.	3

    i)   While using internet he downloads the files from reliable sources and while using social media he always uses polite language. In terms of using internet which quality Rahul is following?

    ii)   One day he received unwanted mails in his inbox. What these unwanted mails are called? 3 6

    iii)   Someone has created his fake Facebook account and started posting some objectionable contents. Which category of cyber crime is this?

OR

Mention any three health hazards associated with inappropriate and excessive use of gadgets.

30.	Consider the following dataframe Classdf	3

	Rollno	Name	Percentage
0	1	Aman	89
1	2	Preeti	87
2	3	Kartik	92
3	4	Lakshya	85

Based on the above dataframe answer the following
  i.   Write the python code to display the record of 'Preeti'.
  ii.   Write the python code to change the row label 0,1,2 and 3 to 'St1,St2,St3 and St4 respectively.
  iii. Write a python code to add a column 'Total' in Classdf, that contain the total marks obtained by each student considering 500 as maximum mark.

SECTION – D

31.	Ganga SHG (Self Help Group) of village Ruchida make different types of pickles and sold it in market. They have started to maintain the following database. Help them to solve the given query. TABLE: Sale	4

P_id	Date	Qty	Rate
P001	2023-08-12	15	150
P002	2023-08-15	16	200
P001	2023-09-16	20	150
P003	2023-09-17	25	300
P004	2023-10-10	10	400

i. Write a query to display the amount of each pickles sold.
ii. Write a query to display the pickle ids soled in the month of September.
iii. Write a query to display the total quantity of pickle P001 soled.
iv. Write a query to count month wise total number of transactions.

32.	Consider the given DataFrame Sdf and answer the following	4

	Name	Height	Weight
0	Aarav	150	45
1	Nidhi	170	65
2	Shourya	160	60
3	Tripti	165	63

i. predict the output of the following python code
    (a) print(Sdf.shape)
    (b) print(Sdf['Height'].max( ))
ii. Write a python code to display number of elements in the DataFrame Sdf.
iii. Write a python code to create a Series nm from the Name column of the DataFrame Sdf.
(note: panda is imported with alias pd)
OR
(Option for part iii only)
Write Python statement to export the DataFrame to a CSV file named data.csv

SECTION – E

| 33.	Write suitable SQL queries for the following: i. To calculate the square root of the number 1600. ii. To display day of the year for current date. iii. To round off the value 3445.67 to nearest ten. iv. To remove all the probable leading x from the string "xxxxxxxDAVxxxxxx". **v.** To display the two digit year of the string 'USS/09/67/23'. The last two characters tell the year	5

OR

Ayush has created following table named Test

Student	Half-Yearly-exam	Final-Exam
Swati	40	42
Sharad	15	28
Shekhar	25	48
Arpit	48	46
Sachin	29	33

Help him in writing SQL queries to the perform the following task:
i. Insert a new record in the table having following values:
    ['Kamini',49,45]
ii. To change the value of Shekhar to 45 in half yearly examination column.
iii. To display the total marks obtain. i.e. addition of both half yearly and final emam.
iv. To add a new column **Result** of suitable datatype.
v. To change the data of Result column to 'Pass' for those student who obtain more then 30 marks
    in final exam.

34.	Rakesh Training institute provide athletic training, planning to set up its centre in Raigarh with four specialised blocks for Admission, Management, Coach and Law in separate buildings. The physical distances between these blocks and the number of computers to be installed in these blocks are given below. You as a network expert have to answer the queries as raised by their board of directors.	5
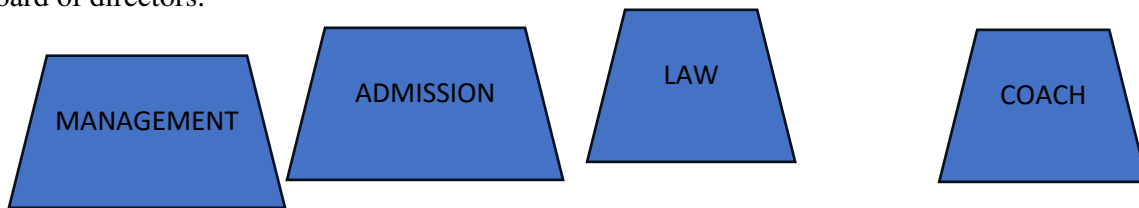
Distance between blocks in metres:

Admission to Management	60
Management to Law	60
Management to Coach	40
Admission to Coach	50
Admission to Law	110
Law to Coach	40

Number of computers installed at various blocks:

Management block	150
Law block	50
Admission block	70
Coach block	20

i.   Out of the four blocks on campus, suggest the location of the server that will provide the best connectivity. Explain your response.
ii.   Suggest by drawing the best cable layout for effective network connectivity of the blocks for a wired connection.
iii.   Suggest the placement of the following devices with justification
   (a)   Modem
   (b)   Hub/Switch
iv.   The institute intends to link its Raigarh and Delhi centers. Out of LAN, MAN, or WAN, what kind of network will be created? Justify your answer.
v.   Which of the following will you suggest to establish the online face to face communication between the Raigarh offce to Delhi centers..
   (a) Cable TV
   (b) E-mail
   (c) Video conferrencing

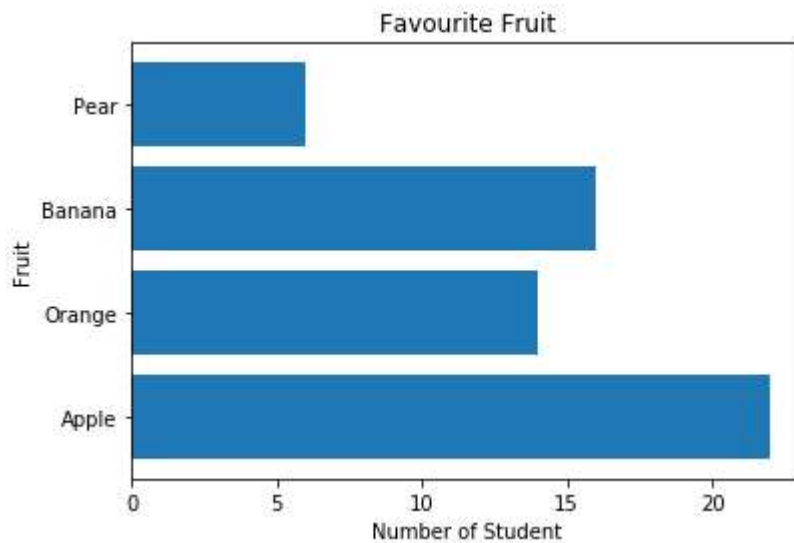| 35. | Mr.X want to invest in the stock market. Therefore he has shortlisted the below stocks and wants to know the frequency of the prices | 5 |

Share no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Price (Rs.)	190	250	171	190	500	301	222	100	1000	310	800	500	200	510

Write suitable Python code to generate a histogram of 5 bins based on the given data, along with an appropriate chart title and both axis labels.
Also give suitable python statement to save this chart.

OR

Write suitable Python code to create 'Favourite Fruit' Bar Chart as shown below:

Favourite Fruit

Also give suitable python statement to save this chart.