

D.A.V. PUBLIC SCHOOLS CG ZONE
SAMPLE PAPER 3 2023-24
Class : XII

Time : 3 Hrs.

Subject : INFORMATICS PRACTICES (065)

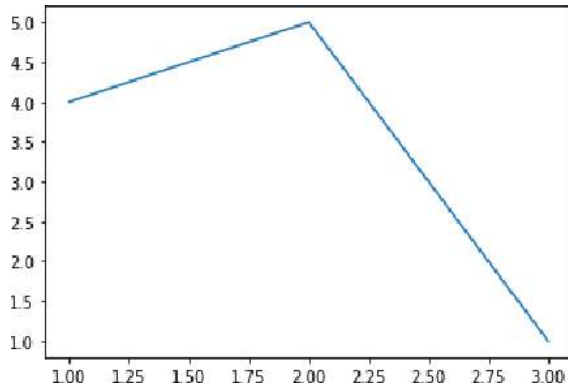
Max. Marks : 70

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 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each.
8. All programming questions are to be answered using Python Language only.

PART A		
1.	Mr X sitting on hot seat of KBC game of Sony TV and Mr Amitabh Bachhan ask a question to Mr X that one of the statements is not correct. You help to Mr X for finding the correct answer : i. import matplotlib.pyplot ii. matplotlib.PyPlot as pl iii. import matplotlib.pyplot as plt iv. matplotlib.pyplot.plot(x,y)	1
2.	All Pandas data structure are _____ mutable but not always _____ mutable? i. Size, value ii. Size, data type iii. Value, size iv. None of the above	1
3.	Which method is used to plot horizontal bar graph in pyplot ? i. horizontal_bar() ii. barh() iii. hbar() iv. bar()	1
4.	Which argument must be set with plotting functions for legend () to display the legends? i. data ii. label iii. name iv. sequence	1
5.	Which type of values will not be considered by SQL while executing The following statement?	1

	<p>SELECT COUNT(column name) FROM employee;</p> <p>i. Numeric value ii. text value iii. Null value iv. Date value</p>	
6.	<p>What will be the output of the following: Insert into Student values ('Susan',109,'F'), values ('Sai,110,'M'), values ('Vinay,111,'M');</p> <p>i. Error ii. No Error iii. Depends on complier iv. Successful completion of the query</p>	1
7.	<p>Mohan found that he could search for a product in shopping website using his voice. This is an instance of</p> <p>i. Natural Language Processing ii. Grid computing iii. Block chain technology iv. Immersive experience</p>	1
8.	<p>A _____ is a unique data trace of a user's activities, actions, communications or transactions in digital media.</p> <p>i. Digital Handprint ii. Digital Footprint iii. Offline Footprint iv. Offline Handprint</p>	1
9.	<p>Following are the impact of e-waste on the environment. Choose the odd one out.</p> <p>i. Soil Pollution ii. Water Pollution iii. Air Pollution iv. Sound Pollution</p>	1
10.	<p>Which function will be used to read data from a CSV file into pandas data frame?</p> <p>i. readcsv() ii. to_csv() iii. read_csv() iv. csv_read()</p>	1
11.	<p>What will be the output of the given code?</p> <pre>import pandas as pd s = pd.Series([1,2,3,4,5], index=['akram','brijesh','charu','deepika','era']) print(s['charu'])</pre> <p>i. 1 ii. 2 iii. 3 iv. 4</p>	1
12.	Observe the following figure.	1



Identify the coding for obtaining this as output.

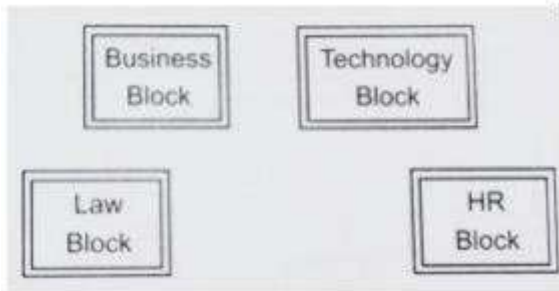
- i. `import matplotlib.pyplot as plt`
`plt.plot([1,2],[4,5])`
`plt.show()`
- ii. `import matplotlib.pyplot as plt`
`plt.plot([1,2,3],[4,5,1])`
`plt.show()`
- iii. `import matplotlib.pyplot as plt`
`plt.plot([2,3],[5,1])`
`plt.show()`
- iv. `import matplotlib.pyplot as plt`
`plt.plot([1,3],[4,1])`
`plt.show()`

13.	Predict the output of the following queries:	1
	<ol style="list-style-type: none"> i. <code>Select power(5,3);</code> ii. <code>Select mod(5,3);</code> 	
14.	_____method in Pandas can be used to change the index of rows and columns of a Series or Dataframe :	1
	<ol style="list-style-type: none"> i. <code>rename()</code> ii. <code>reindex()</code> iii. <code>reframe()</code> iv. none of the above 	
15	AARUSHI SINGHANIA has decided to share the data among various computers of her two office branches situated in the same city named PURULIA. Out of the followings which network will be formed in this process?	1
	<ol style="list-style-type: none"> i. MAN ii. LAN iii. PAN iv. WAN 	
16	MySQL command to change the size of a column named 'Address' of a table 'Company' from Varchar(10) to Varchar(50) is:	1
	<ol style="list-style-type: none"> i. <code>ALTER TABLE Company CHANGE Address to Varchar(50);</code> ii. <code>UPDATE Company SET Address = Varchar(50);</code> iii. <code>ALTER TABLE Company MODIFY Address Varchar(50);</code> iv. <code>UPDATE Company SET Address = Varchar(50) WHERE Address = Varchar(10);</code> 	
17	While accessing the column from the data frame, we can specify the column name. In case column does not exist, which type of error it will raise:	1
	<ol style="list-style-type: none"> i. Key Error 	

	<ul style="list-style-type: none"> ii. Syntax Error iii. Name Error iv. Runtime Error 											
18	<p>All aggregate functions except _____ ignore null values in their input collection.</p> <ul style="list-style-type: none"> i. Count(attribute) ii. Count(*) iii. Avg iv. Sum 	1										
PART B												
19	What do you mean by Identity theft? Explain with the help of an example.	2										
20	<p>Nivedita has recently shifted to new city. She does not know many people in her new city. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile. She is also getting repeated mails from unknown people. Every time she goes online she finds someone chasing her online.</p> <ul style="list-style-type: none"> i. What is this happening to Nivedita? ii. What action should she taken to stop them? 	2										
21	<p>Expand the following terms related to Computer Networks:</p> <ul style="list-style-type: none"> i. HTTPS ii. IMAP iii. TCP/IP iv. URL 	2										
22	<p>i. Create the given table with following details</p> <p style="text-align: center;">Table: Order</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Column Name</th> <th>Constraints</th> </tr> </thead> <tbody> <tr> <td>OrderId</td> <td>Primary Key</td> </tr> <tr> <td>OrderDate</td> <td>Not NULL</td> </tr> <tr> <td>OrderAmount</td> <td></td> </tr> <tr> <td>StoreId</td> <td></td> </tr> </tbody> </table> <p>ii. Also list the difference between unique key and primary key constraint</p>	Column Name	Constraints	OrderId	Primary Key	OrderDate	Not NULL	OrderAmount		StoreId		2
Column Name	Constraints											
OrderId	Primary Key											
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23	<ul style="list-style-type: none"> i. What is the purpose of GROUP BY clause in MySQL? How is it different from ORDER BY clause? ii. Shanya Khanna is using a table EMPLOYEE. It has the following columns: Admno, Name, Agg, Stream [column Agg contains Aggregate marks] <p>She wants to display highest Agg obtained in each Stream. She wrote the following statement: SELECT Stream, MAX(Agg) FROM EMPLOYEE;</p> <p>But she did not get the desired result. Rewrite the above query with necessary changes to help her get the desired output.</p>	2										
24	Hitesh wants to display the last four rows of the DataFrame df and has written the following code :	2										

	>>df.tail() But last 5 rows are being displayed. Identify the error and rewrite the correct code so that last 4 rows get displayed																																																	
25	Write a python code to create a dataframe with appropriate headings from the list given below : ['S101', 'Amy', 70], ['S102', 'Bandhi', 69], ['S104', 'Cathy', 75], ['S105', 'Gundaho', 82]	2																																																
PART C																																																		
26	What do you understand by Net Etiquettes? Explain any two such etiquettes.	3																																																
27	Differentiate between Web browser and Web Server. Write any two popular Web browsers.	3																																																
28	Explain the following function with example: (i) trim() (ii) month() (iii) dayname()	3																																																
29	Write the output of the following: (i) Select instr("1234567891262512145", "4"); (ii) Select mid("Informatics Practices", 4, 8) (iii) Select year(now());	3																																																
30	Consider the following Series object S 0 0.4758 1 0.2656 2 0.8637 3 0.6541 What will be return by the following statements i. S*100 ii. print(S>0) iii. S3=pd.Series(S)+3	3																																																
PART D																																																		
31.	Reena, a car dealer has stored the details of all cars in her showroom in a table called Car Details (Note: Cost is in lakhs Rupees). Based on the following table, write the SQL Queries to help Reena to get the information she needs. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Code</th> <th>Name</th> <th>Company</th> <th>Color</th> <th>Cost</th> <th>DOM</th> </tr> </thead> <tbody> <tr> <td>C01</td> <td>BALENO</td> <td>SUZUKI</td> <td>BLUE</td> <td>5.90</td> <td>2019-11-07</td> </tr> <tr> <td>C02</td> <td>INDIGO</td> <td>TATA</td> <td>SILVER</td> <td>12.90</td> <td>2020-10-15</td> </tr> <tr> <td>C03</td> <td>GLC</td> <td>MERCEDES</td> <td>WHITE</td> <td>62.38</td> <td>2020-01-20</td> </tr> <tr> <td>C04</td> <td>A6</td> <td>AUDI</td> <td>RED</td> <td>58.55</td> <td>2018-12-29</td> </tr> <tr> <td>C05</td> <td>INNOVA</td> <td>TOYOTA</td> <td>BLACK</td> <td>32.82</td> <td>2017-11-10</td> </tr> <tr> <td>C06</td> <td>WAGON-R</td> <td>SUZUKI</td> <td>WHITE</td> <td>12.11</td> <td>2016-11-11</td> </tr> <tr> <td>C07</td> <td>BREZZA</td> <td>SUZUKI</td> <td>GOLDEN</td> <td>9.80</td> <td>2016-10-03</td> </tr> </tbody> </table> i. Display the car name along with the cost rounded off to 1 digit after decimal place. ii. Display the car name, color and position of the character 'E' in the color of all the cars. iii. Display the car name ,name of the company in lower case of all cars whose year of manufacturing is 2020 iv. Display the number of cars manufactured each year v. What is the cardinality and degree of the table Car Details	Code	Name	Company	Color	Cost	DOM	C01	BALENO	SUZUKI	BLUE	5.90	2019-11-07	C02	INDIGO	TATA	SILVER	12.90	2020-10-15	C03	GLC	MERCEDES	WHITE	62.38	2020-01-20	C04	A6	AUDI	RED	58.55	2018-12-29	C05	INNOVA	TOYOTA	BLACK	32.82	2017-11-10	C06	WAGON-R	SUZUKI	WHITE	12.11	2016-11-11	C07	BREZZA	SUZUKI	GOLDEN	9.80	2016-10-03	5
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32.	People's University is setting up its academic blocks at Chennai and its planning	5																																																

to set up a network. The university has 3 academic blocks and one human resource centre as shown in diagram below:



Center to center distances between various blocks is as follows:

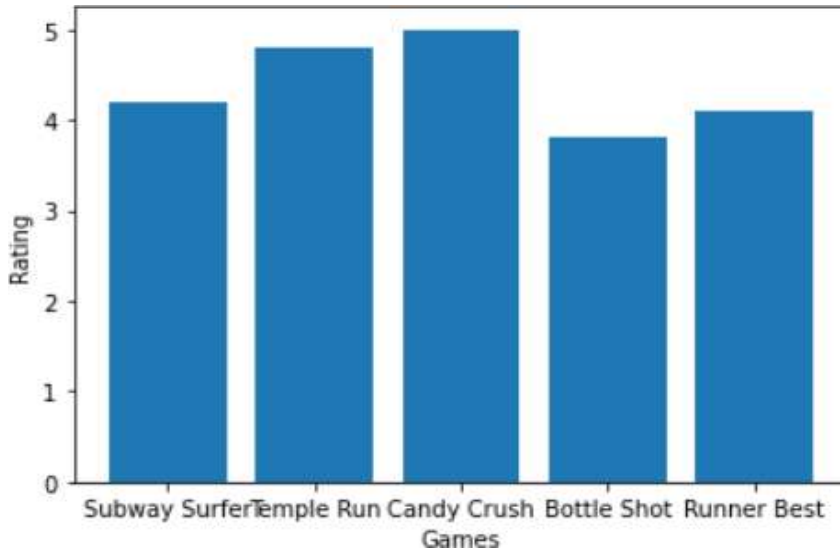
Law Block to business Block	40m
Law block to Technology Block	80m
Law Block to HR center	105m
Business Block to technology Block	30m
Business Block to HR Center	35m
Technology block to HR center	15m

Number of computers in each of the block is as follows

Law Block	15
Technology Block	40
HR center	115
Business Block	25

- i. Suggest the most suitable place to install the server of this university with the suitable resource
- ii. Suggest an ideal layout for connecting these blocks for a wired connectivity
- iii. Which device will you suggest to be placed / installed in each of these blocks to efficiently connect all the computers within these blocks the University is planning to connect its admission office in the closet big city, which is more than 250kms from university?
- iv. Which type of network out of LAN, WAN & MAN will be formed justify your answer.
- v. Which of the following will you suggest to establish the online face to face communication between the people in the various blocks?
 - a. Cable TV
 - b. Email
 - c. Video conferencing
 - d. Text chat

33. Mr. Sharma is working in a game development industry and he was comparing the given chart on the basis of the rating of the various games available on the play store. 5



- i. He is trying to write a code to plot the graph. Help Mr. Sharma to get the desired output and Also help him to save the chart
- ii. In case Mr. Sharma wants to change the above plot to the any other shape, which statement in your code, should he change?

PART E

34. Based on table **GARMENT** given here, write suitable SQL queries for the following:

GCODE	GNAME	SIZE	COLOUR	PRICE
101	T-shirt	XL	Red	1400
102	Jeans	L	Blue	1600
103	Skirt	M	Black	1100
104	Ladies Jacket	XL	Blue	4000
105	Trousers	L	Brown	1500
106	Ladies Top	L	Pink	1200

- i. To display the names of garments those are available in 'XL' size.
- ii. To display the codes and names of those garments that has their names starting with 'Ladies'.
- iii. To display the garment code, name and prices of those garments whose price in the range 1000 to 1500 (both values inclusive).
- iv. To change the color of the garment with code as 106 to "Blue".

35. Sanyukta is the event incharge in a school. One of her students gave her a suggestion to use Python Pandas and Matplotlib for analysing and visualising the data, respectively. She has created a Data frame "SportsDay" to keep track of the number of First, Second and Third prizes won by different houses in various events.

	HouseName	First	Second	Third
0	Chenab	5	7	6
1	Ganges	10	5	4
2	Jamuna	12	13	15
3	Jhelum	8	9	12
4	Ravi	5	11	10
5	Satluj	10	5	3

Write Python commands to do the following

- i. Display the house names where the number of Second Prizes are in the range of 12 to 20
- ii. Display all the records in the reverse order.
- iii. Display the bottom 3 records.
- iv. Display the size of the dataframe