Subject Code-065

DAV PUBLIC SCHOOLS ,CG ZONE

Sample Paper 6 : 2023-24
CLASS XII
INFORMATICS PRACTICES (065)

TIME: 03 HOURS   **M.M.: 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 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.	In _____ topology each node is connected with two neighboring nodes. Data is received from one end and forwarded to other end.
	   i. Star
	   ii. Bus
	   iii. Ring
	   iv. Mesh
		1

2.	Which is not a benefit of e-waste recycling?
	   i. Allows for recovery of precious metals.
	   ii. Protects public health and water quality
	   iii. It saves landfill space
	   iv. It allows to save trees.
		1

3.	Hacking, Spoofing, Phishing and Social engineering/ pre texting comes under:
	   i. Intellectual Property Right
	   ii. Cyber Crime
	   iii. Copy Right
	   iv. Cyber bullying
		1

4.	Predict the output of the query: SELECT MOD (15,0); i. 0	1

	ii. **NULL**	
	iii. **NaN**	
	iv. **15**	

5.	**Which function will extract substring from starting of the string?**
	
	    i. **Str()**
	
	    ii. **SubStr()**
	
	    iii. **Left()**
	
	    iv. **LeftStr()**
		1

6.	**_____ is not a feature of FOSS.**
	
	    i. **Foss may come free or with a nominal payment.**
	
	    ii. **It is Free.**
	
	    iii. **It can be modified**
	
	    iv. **It can be redistributed**
		1

7.	**Which command is used to export Dataframe to CSV :**
	
	    i. **df.export_CSV`(“data.csv”)**
	
	    ii. **df.to_csv(“data.csv”)**
	
	    iii. **df.export_csv(“data.csv”)**
	
	    iv. **df.to_CSV(“data.csv”)**
		1

8.	**Niraj, a Database Administrator, trying to design a table in such a way that before entering data in the second table. The same data should be entered in previous table. Which constraint should be used.**
	
	    i. **Primary key**
	
	    ii. **Check**
	
	    iii. **Foreign key**
	
	    iv. **Unique key**
		1

9.	**What will be the output of the following query:**
	
	`SELECT length (Substr('Mera Bharat Mahan',6,6));`
	
	    i. **6**
	    ii. **7**
	    iii. **4**
	    iv. **5**
		1

10.	**Which of the following command will convert rows into column and columns into rows? If instance of datframe is df.**	**1**

	i. **df.T** ii. **df.inverse()** iii. **df.transpose()** iv. **df.revrse()**	

11.	**With reference to SQL, to store a long content which data type should be used.**
	
	    i. **Memo**
	
	    ii. **Big Text**
	
	    iii. **Varchar(long)**
	
	    iv. **Char(long)**
		1

12.	**In Python Pandas, while performing mathematical operations on given series,**
	
	<table><tr><td>**S1**</td><td></td><td>**S2**</td><td></td></tr><tr><td>**1**</td><td>**5**</td><td>**2**</td><td>**5**</td></tr><tr><td>**2**</td><td>**4**</td><td>**3**</td><td>**4**</td></tr><tr><td>**3**</td><td>**6**</td><td>**5**</td><td>**6**</td></tr><tr><td>**5**</td><td>**2**</td><td>**6**</td><td>**2**</td></tr></table>
	What will be the output of the .
	
	S3=S1+S2
	
	print(S3.size)
	
	    i. **4**
	
	    ii. **5**
	
	    iii. **6**
	
	    iv. **0**
		1

13.	**In a Essay Writing competition a student copied the content from a website. His work will be treated as:**
	
	    i. **Phishing**
	
	    ii. **Identity Theft**
	
	    iii. **Plagiarism**
	
	    iv. **Copy Right**
		1

14.	**which one of the following SQL statement is a wrong statement:**	**1**

		i. Update student set marks=25 where Rno='B-1205';	
		ii. Alter table student drop primary key(Rno);	
		iii. Select * from student order by Rno asc;	
		iv. Create database school;	

15.		**URL stands for:**
		     i. **Universal Resource Locator**
		     ii. **Universal Remote Locator**
		     iii. **Uniform Resource Locator**
		     iv. **Uniform Remote Locator**
			1

16.		**_____ is Responsible for setting standards on Internet.**
		     i. **OSS**
		     ii. **FOSS**
		     iii. **GNU**
		     iv. **W3C**
			1

17.		**Assertion (A):- Mesh topology is excellent in service and reliable.**
		
		 Reasoning (R): - Each node is having direct and alternative routes to other nodes.
		     i. **Both A and R are true and R is the correct explanation for A**
		     ii. **Both A and R are true and R is not the correct explanation for A**
		     iii. **A is True but R is False**
		     iv. **A is false but R is True**
			1

18.		**Assertion (A):- A Dataframe is value mutable and size mutable.**
		 Reasoning (R): - All changes occur in a duplicate Dataframe.
		     i. **Both A and R are true and R is the correct explanation for A**
		     ii. **Both A and R are true and R is not the correct explanation for A**
		     iii. **A is True but R is False**
		     iv. **A is false but R is True**
			1

		SECTION B	
19.		**Differentiate between website and a web portal.** **OR** **Rati is doing a course in networking. She is unable to understand the concept of URL and Domain Name. Help her by explaining it with the help of suitable example.**	**2**
20.		**The python code written below has syntactical errors. Rewrite the correct**	**2**

codeand underline the corrections made.

```
Import pandas as pd
data = [['Alex',10],['Bob',12],['Clarke',13]]
df = pd.Dataframe(data,column=['Name' 'Age'],
     index=['rank 1','rank 2','rank 3'],dtype=float)
print(df)
```

21.	Consider the given number and write the output of SQL statements:	2
	i. Select round (458923.1245,-3)	
	ii. Select Truncate (458923.1245,3)	
	iii. Select pow(-2,5)	
	iv. Select month('2023-09-25)	

22.	Write python code to create dataframe using dictionary of list :	2

```
            RollNo     Name          Marks
1st         12019      Amar          69
2nd         1205       Akabar        66
3rd         1225       Anthony       64
```

23.	Explain the term Social engineering/ prtexting with respect in current scenario.	2

24.	Co`'Sariska'`mplete the given Python code to get the required output as: **Rajasthan**	2

```
Import _____ as pd
di = {'Corbett': 'Uttarakhand', 'Sariska':
'Rajasthan', 'Kanha': 'Madhya Pradesh',
'Gir':'Gujarat'}
NP =_____. Series(_____)
print(NP[_____])
```

25.	What are the functions instr() and substr() in SQL? Explain with a example code and output .	2

<center>SECTION C</center>

26.	Based on the SQL table INVOICE , write suitable queries for the following:	3

SNO	Particular	Quantity	Rate	Total
1	Rice	5	50	250
2	Potato	3	25	75

3	Tomato	5	20	100	

i. **Write command to update Total by product of QUANTITY and RATE**

ii. **Display PARTICULAR and TOTAL in the descending order of TOTAL.**

iii. **Display records having rate more than 25.**

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

Predict the output of the following queries based on the table INVOICE given above:

```
i. SELECT LEFT(PARTICULAR,2) FROM INVOICE WHERE
Rate<=25;
ii.     SELECT FROM INVOICE;
iii.    SELECT PARTICULAR, Rate FROM INVOICE WHERE
PARTICULAR like '%to' and Rate >20 ;
```

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27. **Create a DataFrame named with dfsal in Python using list of list that give following dataframe as output.** | **3**

	Name	Department	Salary
0	Divya	HR	95000
1	Mamta	Marketing	97000
2	Payal	IT	100000
3	Deepak	Sales	75000

By considering above Dataframe write code for:

i. **To display column names.**

ii. **To display shape of dataframe**

iii. **To access last 3 rows.**

iv. **What will be the output: print(dfsal.tail(3))**

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28. **Write MySQL statements for the following:** | **3**

i. **To create a database named Exam.**

ii. **To create a table named Marks based on the following specification:**

Column Name	Data Type	Constraints	
SubCode	Varchar(20)	Primary Key	
SubName	Varchar(25)	AlterNet key	
MaxMarks	Integer	Default 100	

MinMarks	Integer	
ObtMarks	Float	Can store 6 digit with two decimal places

29.	Shraddha, a programmer does not like some of the features of the software MS-Office and she wants to see the source code of the software and change it. Now, answer the following questions on the basis of above reading:
	
	   i. What type of software is MS-Office?
	
	   ii. Shraddha has searched for few softwares online, in which she can change the source code.What are such software called as?
	
	   iii. What kind of illegal activity can happen, if a wrong link/software is clicked?
	
	 Or
	Why should Intellectual Property rights be protected?.
		3

30.	Consider the given DataFrame 'dfemp':
	
	            Name Job
	   0 Ram Teacher
	   1 Sita Doctor
	   2 Krishna Actor
	   3 Radha Dancer
	
	Write suitable Python statements for the following:
	
	   i. Add a column called Income with the following data: [50000,99000,45000,76000].
	
	   ii. Add a new Name 'Shiva' having Job as "Army" and 60000 Income.
	
	   iii. Rename the column 'Job' to 'Occupation'.
		3

	SECTION D	
31.	Army hospital Patna maintains the following table for its patients. They want certain outputs department wise - like the average charges, total number of patients department wise etc. As a database programmer, helps them to get the required outputs.	4

Table: Hospital

PatID	Pname	Dept	Charges
P01	Amit	Ent	5600
P02	Sunil	Eye	7000
P03	Rina	Ortho	2500
P04	Akash	Ortho	9000
P05	Amitabh	Ent	4000
P06	Preeti	Ortho	5000

(i) Display each Dept and the total number of patients in each.

(ii) Display the department wise average Charges which is more than 5000.

(iii) Display the total number of unique departments.

(iv) Display the minimum Charges among patients name starts with "S" or

---

32. Ms. Jennifer Christiano wants to create a DataFrame "Football" and perform some operations with it.

Football

	Player	Club	Charges
0	Ronaldo	AC Milan	9.6
1	Pele	Real Madrid	10.5
2	Maradona	Royal Argentina	19.5

(Assume pandas is imported as pd)

(a) Write the output for the following:

    (i)   Football['Charges']/2

    (ii)   Football.size

(b) Help her to write the code for the following:

To set the index as 'R','P' and 'M', respectively for the three rows.

(c) To display rows where charges is less than 10.

                Or (Option for part (c) only)

To make all the charges to 11.9

4

SECTION E

33. Akhilesh a clerical staff in a Doctor's Dispensary. maintains records of visiting doctors in table Doctor. He wants to analyse some data and find some results

such as total number doctors of certain departments, average charges in some departments etc. Help him in within proper queries to get the results.

Table: Doctor

Did	Dept	Dname	Charges	VisitDays
D01	ENT	R. Sharma	1000	Mon
D02	ENT	D. Basak	1500	Wed
D03	PAED	M Agrawal	6000	Sat
D04	Ortho	E. Joseph	1200	Sun
D05	Ortho	M. Fernandes	4000	Thu

i. To display the maximum Charges among the Ortho Doctors.

ii. To display the doctor names in uppercase along with their department names concatenated.

iii. To display each department and the total number of doctors in them.

iv. To display each department and the average charges of each.

v. To display the detail of doctor whose department is ENT.

Or

Table: Club

COACH _ID	COACH NAME	AGE	SPORTS	DateofJoining	PAY
1	Rajesh	30	Karate	1999-08-25	1000
2	Anuj	35	Swimming	2000-01-05	750
3	Shuchi	25	Basketball	2005-01-04	1200
4	Reetika	28	Badminton	2002-08-25	1400
5	Virendra	32	Cricket	1996-05-17	1500

Give the answer of the following questions on the basis of the above table.

i. Write a query to display first 4 characters of the name of each coach, and Sports whose age is greater than 30.

ii. What will be the output of the following query?
SELECT CONCAT (COACHNAME.,AGE) FROM CLUB WHERE AGE> 30;

iii. Write a query to display the day for the Date of Joining column.

	iv. What will be the output of the following query? **SELECT PAY *0.25 + 1000 FROM CLUB WHERE COACHNAME LIKE R%:** v. Write a query to display the position of occurance in leter 'a' in coach name.	
34.	In a university there are four departments. Which description are as follows. Study the given data and suggest best option that suits. <table><tr><td>**Computer Dept to Pharmacy**</td><td>180 Meters</td></tr><tr><td>**Computer Dept to MBA**</td><td>165 Meters</td></tr><tr><td>**Computer Dept to Physical Education**</td><td>190 Meters</td></tr><tr><td>**Pharmacy Dept to MBA**</td><td>145 Meters</td></tr><tr><td>**Pharmacy Dept to Physical Education**</td><td>220 Meters</td></tr><tr><td>**MBA to Physical Education**</td><td>160 Meters</td></tr></table> <table><tr><td>**Department**</td><td>**Number of computers**</td></tr><tr><td>**Computer**</td><td>300</td></tr><tr><td>**Pharmcy**</td><td>180</td></tr><tr><td>**MBA**</td><td>160</td></tr><tr><td>**Physical Education**</td><td>120</td></tr></table>	5

	The company is planning to form a network by joining these blocks.
	
	  i. Out of the four Departments on campus, suggest the location of the server thatwill provide the best connectivity. Explain your response.
	
	  ii. For very fast and efficient connections between various blocks within the campus, suggest a suitable topology and draw the same.
	
	  iii. Suggest the placement of the following devices with justification
	
	    (a) Repeater
	
	    (b) Hub/Switch
	
	  iv. Which type of network has been formed in the university ?
	
	  v. Why we should use Switch in place of Hub ? Justify your answer.	

35.	The Marks of 10 students of Tent grade are given below: MathMarks=[30,40,50,60,30,50,40,80,90,45] Write suitable Python code :	5

i. Show appropriate chart title.

ii. Both axis labels.

iii. Show histogram in red color.

iv. To generate a histogram based on the given data

v. Write python statement to save this chart.

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

In a survey on 1000 people and their hobbies. On the basis of survey following bar graph has been prepared with data as given below.Write suitable Python code:

Dance	300
Music	200
Painting	350
Gardenning	150

i. Chart Title 'Favourite Hobby'.

ii. Both axis labels.

iii. Show Bar Graph in Blue color.

iv. To generate a based on the given data

v. Give suitable python statement to save this chart.