

D.A.V. INSTITUTIONS, CHHATTISGARH

SAMPLE PAPER 2 2023-24

CLASS - XII

SUBJECT: Informatics Practices

Time Allowed: 3 Hours

Maximum 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 questions carrying 04 marks each.**
- 7. Section E has 03 questions carrying 05 marks each.**

SECTION A

1. Which of the following statement is called smart Hub.
(a) Passive HUB (b) HUB (c) switch (d) All of these
2. To connect dissimilar networkis used
(a) Gateway (b) Bridge (c) Router (d) Switch
3. The protocol used in Internet is
(a) TCP/IP (b) TPC/IP (c) TIP/IP (d) TP/IP
4. Sending an email is example of
(a) Live Digital Footprint (b)Active Digital Foot Print
(c) Passive Digital Foot Print (d) All of these
5.means not giving authors credit after copying
(a) Plagiarism (b) Copyright (c) Trademark (d) All of these
6. Which of the following is Not the correct aggregate function .
(a) Average() (b) Max() (c) count() (d) Total()
7. Which one of the following would arrange the rows in ascending order .
(a) Sort by (b) Group by (c) ascending by (d) order by
8. Which is used with “aggregate functions” ?
(a) Select (b) Where (c) Group by (d) Having
9. Afunction returns a result for every row of a queried table .
(a) Single Row function (b) Multiple Row function (c) Group by (d) Many row function
10. To display structure of the table which command is used .
(a) describe (b)des (c) Desc Table (d) Describe table

11. Which attribute not used in Data Frame .

- (a) Size (b)Type (c) columns (d) ndim

12 Python pandas was developed by:

- (a) Guido van Rossum (b) Travis Oliphant (c) Wes McKinney (d) Brendan Eich

13 . Method or function to add a new row in a data frame is:

- (a).loc() (b) .iloc() (c) join (d) add()

14 . Pandas data frame cannot be created using:

- (a) Dictionary of tuples (b) Series (c) Dictionary of List (d) List of Dictionaries

15 . Which function will be used to read data from a CSV file into pandas data frame?

- (a) readcsv() (b) to_csv() (c) read_csv() (d)csv_read()

16. Suppose you are asked to display all the names which have 'a' as their second character then which query pattern you will use?

- (a) __ a%; (b) _a_; (c) _a%; (d) _%a;

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as

- 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

17. Assertion (A): - A primary key is **a column in a relational database table that's distinctive for each record**

Reasoning (R):- A table contains more than one primary key .

18. Assertion (A):- DataFrame has both a row and column index.

Reasoning (R): - A DataFrame is a two-dimensional labelled data structure like a table of MySQL.

SECTION B

19 What is webpage and web site ?

20 The python code written below has syntactical errors. Rewrite the correct code and underline the corrections made.

```
Import pandas as pd
```

```
df={"Technology":["Programming","Robotics","3D Printing"],"Time(in months)":[4,4,3]}  
df= pd.dataframe(df)  
Print(df)
```

- 21 Correct following queries (a) update table student fees=1000 ;
 (b) ALTER student change fees int(5) ;

22 Predict the output of the given Python code:

```
import pandas as pd
l = { 1000 : 'one', 2000 : 'Two', 3000 : 'Three' }
ser = pd.Series(l)
print(ser)
```

23 What is copyright ?

24 Complete the given Python code .

```
import pandas as _____
di = { 1: 'One', 2: 'Two', 3: 'Three' }
NP = X. ____ ( di )
```

25 Between char and varchar , Which is better give reason .

SECTION C

26 Write output from on EMP Table .

EMPNO	ENAME	SAL	JOB	DEPT
E1001	Shobhit Sharma	50000	Manager	Sales
E1002	Kumar Amit	70000	Clerk	Sales
E1003	Rishika Verma	50000	Clerk	Purchase
E1004	Mohit Sahu	12000	Clerk	Purchase
E1005	Sunil Srivastava	60000	Manager	Sales
E1006	Rajesh Sunil	30000	Manager	Purchase

1. Select ENAME , SAL from EMP where SAL>50000 order by SAL desc;
2. Select count(distinct(JOB)) from EMP ;
3. Select ENAME,SAL/2 as “Bonus” from EMP where SAL>50000;

OR Write queries on EMP table

- (a) Display all records those who gets salary every month .
- (b) Display Department wise highest salary
- (c) Display the records in the descending order of salary

Q27 Create a Data Frame in Python from the given list:

```
[[ 'Divya', 'HR', 95000 ], [ 'Mamta', 'Marketing', 97000 ], [ 'Payal', 'IT', 98000 ],  

[ 'Deepak', 'Sales', 79000 ]]
```

Also give appropriate column headings as shown below:

	Name	Department	Salary
0	Divya	HR	95000
1	Mamta	Marketing	97000
2	Payal	IT	980000
3	Deepak	Sales	79000

Q28 Write MySQL statements for the following:

- i. To create a database named MYDB.
- ii. To create a table named CHILD based on the following specification & insert Record
 ID int (5) primary key
 Name varchar(25)

Q29 Write any three rule for communication on internet.

Q30 Write correct output from following code

```
import pandas as pd
d1={2020:[100,99,100,96],2019:[100,100,98,77],2018:[100,98,100,88]}
df1=pd.DataFrame(d1,index=['IP','CS','Math','English'])
print(df1.index)
print(df1.size)
print(df1.shape)
print(df1.ndim)
print(len(df1))
print(df1.columns)
```

SECTION D

31 Rahul manages database in a Super Market start-up. For business purposes, he created a table named Market . Assist her by writing the following queries:

PID	Pname	DOM	Price	Company
A101	Pendrive	12-10-2005	500	Scandisk
A102	SSD	11-11-2015	2500	Sony
A103	HDD	18-06-2011	5500	Kingston
A104	SSD	12-12-2018	7500	Scandisk
A105	HDD	11-12-2021	200	Sony
A106	Pendrive	12-10-2003	300	Scandisk

- i. Write a query to display the year of oldest product.
- ii. Write a query to display the month of most recent transaction.
- iii. Write a query to display total No of Product and Total Price , Product wise.
- iv. Write a query to display Company Name , total No of their products .

32 Write output of the following code

```

import pandas as pd
d1={'SNAME':['AMIT',"SUNIL","AMAN","SUMAN"],
  'ROLLNO':[1001,1002,1003,1004],
  'SUB1':[100,98,100,88],
  'SUB2':[10,20,10,18]}
df1=pd.DataFrame(d1)
print(df1) # statement 1
print(df1.loc[2:3,'SNAME':'ROLLNO']) #statement 2
print(df1.head(2)) #statement 3
print(df1.tail(1)) #statement 4

```

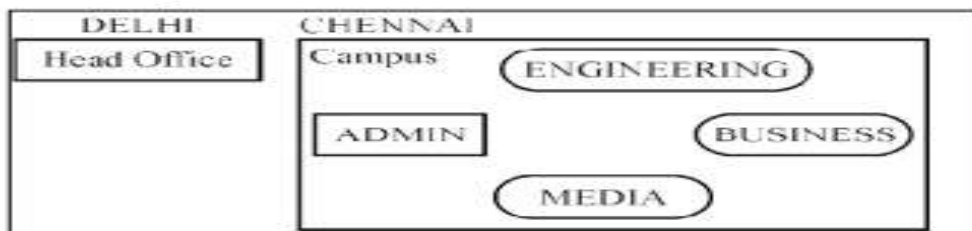
Section E

33 Write suitable SQL queries/ output for the following:

- i. To Display first three character from Name Field from student table.
- ii. To display the position of “or” in “Cricket World Cup”
- iii. Write output select round (34.4567)
- iv. To display Year from Current date.
- v. Write output select pow(length("Computer"),3);

34

Meticulous EduServe is an educational organization. It is planning to setup its India campus at Chennai with its head office at Delhi. The Chennai campus has 4 main buildings – ADMIN, ENGINEERING, BUSINESS and MEDIA.



Block to Block distances (in Mtrs.)

From	To	Distance
ADMIN	ENGINEERING	55 m
ADMIN	BUSINESS	90 m
ADMIN	MEDIA	50 m
ENGINEERING	BUSINESS	55 m
ENGINEERING	MEDIA	50 m
BUSINESS	MEDIA	45 m
DELHI HEAD OFFICE	CHENNAI CAMPUS	2175 km

Number of computers in each of the blocks/Center is as follows:

ADMIN	110
ENGINEERING	75
BUSINESS	40
MEDIA	12
DELHI HEAD	20

- a) Suggest and draw the cable layout to efficiently connect various blocks of buildings within the CHENNAI campus for connecting the digital devices
- b) Which network device will be used to connect computers in each block to form a local area network?
- c) Which block, in Chennai Campus should be made the server? Justify your answer.
- d) Which fast and very effective wireless transmission medium should preferably be used to connect the head office at DELHI with the campus in CHENNAI?
- e) Is there a requirement of a repeater in the given cable layout? Why/ Why not?

35 The Marks of 10 students are given below:

Marks=[45,41,28,14,34,19,25,37,48,16]

Write suitable Python code to generate a histogram based on the given data.

Also give suitable python statement to save this chart.

OR

Write suitable Python code to create 'Unit Test' Bar Chart as shown below:

Also give suitable python statement to save this chart.

