

DAV PUBLIC SCHOOLS MP-CG ZONE

Sample Paper 10

CLASS XII INFORMATICS PRACTICES

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 A _____ is a device that is used to amplify/regenerate the digital signals in the network 1
i. Hub
ii. Modem
iii. Gateway
iv. Repeater
- 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 organization is creating every year, out of the following options 1
i. Business Waste
ii. Commercial Waste
iii. E-Waste
iv. Solid waste
- 3 Legal term to describe the rights of a creator of original creative or artistic work is called _____ 1
i. Copyright
ii. Copyleft
iii. Industrial Property Right
iv. International Property Right
- 4 Predict the output of the following query: 1
SELECT POW (9 , 0) ;
i. 9
ii. NULL
iii. 0
iv. 1
- 5 Which of the following SQL functions does not belong to the Date functions category? 1
i. Year()
ii. MONTH()
iii. MONTHNAME()
iv. WEEKDAY()

- 6 Which amongst the following is not an example of browser? 1
- i. Avast
 - ii. Mozilla Firefox
 - iii. Google Chrome
 - iv. Edge
- 7 In CSV, data is stored using: 1
- i. Binary format
 - ii. ASCII and UNICODE characters
 - iii. Octal format
 - iv. Hexa Decimal Format
- 8 Raju, a Database Administrator, needs to display the number of workers from those departments which have more than five employees. He is experiencing a problem while running the following query: 1
- ```
SELECT DEPT, count(*) FROM EMP WHERE COUNT(*) > 5
GROUP BY DEPT;
```
- Which of the following is a correct query to perform the given task?
- i. `SELECT DEPT, count(*) FROM EMP WHERE COUNT(*) > 5 GROUP BY DEPT;`
  - ii. `SELECT DEPT, count(*) FROM EMP HAVING COUNT(*) > 5 GROUP BY DEPT;`
  - iii. `SELECT DEPT, count(*) FROM EMP GROUP BY DEPT WHERE COUNT(*) > 5;`
  - iv. `SELECT DEPT, count(*) FROM EMP GROUP BY DEPT HAVING COUNT(*) > 5;`
- 9 Predict the output of the following query: 1
- ```
SELECT UCASE(MONTHNAME ('2023-03-05')) ;
```
- i. MAY
 - ii. MARCH
 - iii. May
 - iv. March
- 10 Which of the following command will show the first 3 rows from a Pandas Series named STAR? 1
- i. `STAR.FIRST(3)`
 - ii. `STAR.Head(3)`
 - iii. `STAR.head(3)`
 - iv. `STAR.top(3)`
- 11 With reference to SQL, tuples refers to 1
- i. rows
 - ii. columns
 - iii. data
 - iv. table

- 12 In Python Pandas, all missing values are filled in with ___ by default. 1
- Null
 - Blank
 - NaN
 - Zero
- 13 A person complains that somebody has created a fake profile on the Facebook and is defaming his/her character with comments and pictures. Identify the cyber crime from the list given below 1
- Cyberbullying
 - Identity Theft
 - Plagiarism
 - Cyberstalking
- 14 In SQL, the equivalent of SUBSTR() is: 1
- INSTR ()
 - UPPER()
 - MID()
 - TITLE ()
- 15 _____refers to software which is free of cost, can be copied and redistributed but cannot be modified as no source code is available 1
- Freeware
 - Free software
 - Open source software
 - All of the above
- 16 Which kind of offense out of the following is made by the students? 1
- Cyber Crime
 - Violation of Intellectual Property Rights
 - Civil Crime
 - All of the above
- 17 **Assertion (A):-** PAN(Personal Area Network) is established within a small area (20 to 30 sq.ft) for sharing information among the computers 1
- Reasoning (R): -** The Campus area network is used to interconnect the computers located within a campus such as university campus, hospital campus etc
- Both A and R are true and R is the correct explanation for A
 - Both A and R are true and R is not the correct explanation for A
 - A is True but R is False
 - A is false but R is True
- 18 **Assertion (A):-** To use the Pandas library in a Python program, one must import it. 1
- Reasoning (R): -** For creating Series and DataFrame Pandas library must be imported in our program.
- Both A and R are true and R is the correct explanation for A
 - Both A and R are true and R is not the correct explanation for A
 - A is True but R is False
 - A is false but R is True
- 19 **SECTION B** 2
- What is the difference between Chat and video conferencing?

OR

What is the importance of URL in networking ? Given an example of URL

20 The python code written below has syntactical errors. Rewrite the correct code and underline the corrections made. 2

```
Import pandas as XII
S =pd.series([24,45,78,90],index=[10,20,25])
Print(S)
```

21 Consider the given SQL string: 2

“All the Best! for 2024 Board Exam”

Write suitable SQL queries for the following:

- i. Returns the position of the first occurrence of the substring “2024” in the given string.
- ii. To extract first five characters from the string.

22 Predict the output of the given Python code: 2

```
import pandas as pd
P=[100,20,38]
ser = pd.Series(P*2)
print(ser)
```

23 Differentiate between the active digital footprint and passive digital footprints. 2

24 Complete the given Python code to get the required output as: **Raipur** 2

```
import _____ as pd
di = {'Arunachal Pradesh': 'Itanagar', 'Bihar': 'Patna',
      'Chhattisgarh': 'Raipur', 'Gujarat':Gandhinagar}
S = __. Series(__)
print(S[_____])
```

25 What do you understand by single row functions and multi row functions in SQL? Give brief explanation with examples for both of them 2

SECTION C

26 Write SQL commands for the following queries i to iii based on the given table 3

Employee

ECode	ENAME	ENDER	GRADE	GROSS
1101	BRIAN	M	E3	12000
1102	MAITHILI	F	M1	18000
1103	KUSHAGRA	M	M3	24000
1104	VANSH	M	M3	24000
1105	SAMIRA	F	E2	11000

- i. To display minimum gross pay in each grade
- ii. To display number of employees in each gender
- iii. To list the details of employees in descending order of their name

OR

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

- i. SELECT LEFT(ENAME,2) FROM EMPLOYEE WHERE GRADE LIKE “E_”;
- ii. SELECT GROSS*12 “YEARLY GROSS” FROM EMPLOYEE WHERE GROSS BETWEEN 15000 AND 20000;
- iii. SELECT COUNT(DISTINCT(GRADE)) FROM EMPLOYEE;

27 Write a Python code to create a DataFrame CRICKET with appropriate column headings from the list given below: 3

```
[[1001,'IND-AUS','2022-10-17'], [1002,'IND-PAK','2022-10-23'], [1003,'IND-SA',  
, '2022-10-30], [1004,'IND-NZ','2022-11-18']]
```

28 Write MySQL statements for the following: 3

- i. To create a database named FURNFLY.
- ii. To create a table named FURNTURE based on the following specification:

Column Name	Data type	size	constraints
F_ID	Int	8	Primary key
F_NAME	Varchar	15	
F_PRICE	Float		

29 Nivedita has recently shifted to new city and new school, She does not know many 3

people in the new city and school, But all of a sudden, someone is posting negative, demeaning comments on her social networking profile, school site's forum etc.

She is also getting repeated mails from unknown people Everytime she goes online, she finds someone chasing her on online.

Based on the given information, answer the questions given below.

- i. Identify the type of cybercrime she is a victim of.
- ii. Under which act, she can lodge a complaint to the relevant authorities?
- iii. Suggest her any two precautionary measures which she should take in future while being online to avoid any such situations.

OR

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

30 Consider the given DataFrame df 3

	Age	Name
1	20	Rahul
2	23	Amit
3	22	Parth

Write suitable Python statements for the following:

- i. Add a column called Education with the following data: ['B.COM', 'BE', 'BA'].
- ii. Add a new row with values 25 for age, "Sumit" for Name and "CA" for EDUCATION columns.
- iii. Rename the column 'Education' to 'Qualification'.

SECTION D

31 Prakash has a database SPORTS in his sports club. For business purposes, he created a 4
table named CLUB. Assist him by writing the following queries:

TABLE: CLUB

COACH_ID	CName	Age	Sports	DateOfApp	Pay	Gender
1	KUKREJA	35	KARATE	27/03/2015	20000	M
2	RAVINA	30	KARATE	20/01/2021	24000	F
3	KARAN	28	SQUASH	19/02/2022	21000	M
4	TARUN	31	SWIMMING	01/01/2020	15000	M
5	ZUBIN	36	SWIMMING	12/01/2016	14000	M
6	ANKITA	25	SQUASH	20/02/2022	16000	F
7	KUSH	28	SWIMMING	13/01/2021	18000	M

- Write a query to display the year of oldest date of appointment
- Write a query to display the month of most recent appointment
- Write a query to display all the coaches appointed in the month of February.
- Write a query to count total number of appointments in the year 2022.

32

Consider the following dataframe "S" and answer the questions given below:

4

Class	SEC-A	SEC-B	SEC-C	SEC-D
0 Nursery	30	24	27	23
1 KG-I	35	34	31	32
2 KG - II	29	31	28	30

Answer the following questions:

- Predict the output of the following python statement:
 - print(S.size)
 - print(S[1:3])
- Delete the last row from the DataFrame.
- Write Python statement to add a new column Total which is the addition of all sections(SEC-A,SEC-B,SEC-C&SEC-D)

OR

(Option for part iii only)

Write Python statement to export the DataFrame to a CSV file named data.csv stored at D: drive.

SECTION E

33

Write suitable SQL query for the following:

- Display 4 characters extracted from 3rd character onwards from string 'IMPOSSIBLE'.
- Display the position of occurrence of string 'GO' in the string "LET's GO to GOA".
- Round off the value 257.75 to nearest ten rupees.
- Display the remainder of 18 divided by 5.
- Remove all the leading and trailing spaces from a column passwd of the table 'USER'.

OR

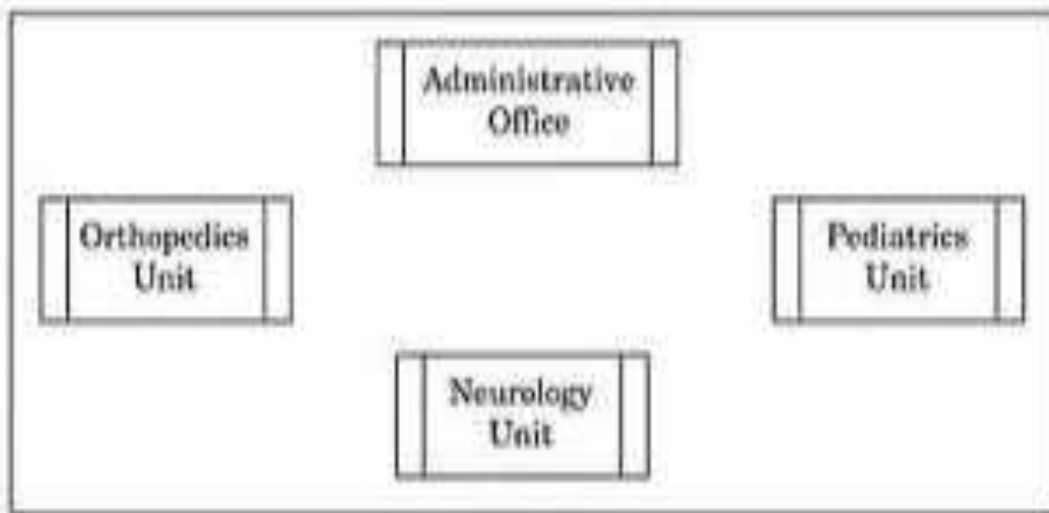
Explain the following SQL functions using suitable examples.

- i) MONTHNAME()
- ii) SUBSTRING()
- iii) LTRIM()
- iv) ROUND()
- v) RIGHT()

34

Ayurveda Training Educational Institute is setting up its centre in Hyderabad with four specialized departments for Orthopedics, Neurology and Pediatrics along with an administrative office in separate buildings. The physical distances between these department buildings and the number of computers to be installed in these departments and administrative office are given as follows. Answer the queries as raised by them in (i) to (v)

5



Shortest distance between various units/office

Administrative Office to Orthopedics Unit	55
Neurology Unit to Administrative Office	30
Orthopedics Unit to Neurology Unit	70
Pediatrics Unit to Neurology Unit	50
Pediatrics Unit to Administrative Office	40
Pediatrics Unit to Orthopedics Unit	110

Number of Computers installed at various locations are as follows :

Pediatrics Unit	40
Administrative Office	140
Neurology	50
Orthopedics Unit	80

- a) Suggest the most suitable location to install the main server of this institution to get efficient connectivity.
- b) Suggest the best cable layout for effective network connectivity of the building having server with all the other buildings.
- c) Suggest the devices to be installed in each of these buildings for connecting computers installed within the building out of the following : Gateway, switch, Modem
- d) Suggest the topology of the network and network cable for efficiently connecting each computer installed in each of the buildings out of the following :
- e) Suggest type of network to connect each building

35

The Weights of 16 students are given below:

Weight_kgs=[72,70,65,53,67,71,58,60,75,80,77,64,62,74,50,69]

Write suitable Python code to generate a histogram 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 **Student Report'** Bar Chart as shown below:

Also give suitable python statement to save this chart.

STUDENT REPORT

