THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

SECOND MODEL EXAMINATION 2023-2024

Class: XII   **INFORMATICS PRACTICES (065)**   **Time: 3.00 Hrs.**

Max. Marks: 70

General Instructions:
• The question paper contains five sections, Section A to E.
• **SECTION A** have 18 questions carrying 01 mark each.
• **SECTION B** has 07 very short answer type questions carrying 02 marks each.
• **SECTION C** has 05 short answer type questions carrying 03 marks each.
• **SECTION D** has 03 long answer type questions carrying 05 mars each.
• **SECTION E** has 02 questions carrying 04 marks each.
• **All** questions are **compulsory**.

SECTION A

1. Which of the following protocols is used for receiving mails of the recipient in the computer?

   a) SMTP
   b) IMAP
   c) HTTP
   d) FTP

2. Copyright, patent, and trademarks comes under

   a) Intellectual property right
   b) Individual property right
   c) Industrial property right
   d) None

3.Firewalls are used to protect against…………………

   a) Virus attacks
   b) Hacking

c) Fire attacks

d) All of these

4. Predict the output of the following query

SELECT MOD(9,0);

a) 0

b) NULL

c) NaN

d) 9

5.Name the keyword which includes libraries in a python program. a)

import

b) pandas

c) matplotlib

d) NumPy

6.'O' in FOSS stands for

a) Outsource

b) Open

c) Original

d) Outstanding

7. Which of the following SQL function does not belong to the math functions

category?

a) POWER()

b) ROUND()

c) LENGTH()

d) MOD()

8. Predict the output of the following query:

SELECT LCASE(MONTHNAME('2023-03-05'));

a) May
b) March
c) may
d) march

9. Raj, a database administrator needs to display the average pay of workers from the departments which have more than five employees. He is experiencing a problem while running the following query

Select DEPT, AVG(SAL) from EMP where count(*)>5 group by DEPT;

Which of the following is the correct query to perform the given task?

a) Select DEPT, AVG(SAL) from EMP where count(*)>5 group by DEPT;
b) Select DEPT, AVG(SAL) from EMP having count(*)>5 group by DEPT;
c) Select DEPT, AVG(SAL) from EMP group by DEPT where count(*)>5;
d) Select DEPT, AVG(SAL) from EMP group by DEPT having count(*)>5;

10. CSV stands for

a) Column separated value
b) Class separated value
c) Comma separated value
d) None

11. Which of the following will produce first 3 data form a Series named 'Ser'?

a) Ser.top(3)

b) Ser.first(3)
c) Ser.Head(3)
d) Ser.head(3)

12. What will be the output of the following?

    import pandas as pd

```
val=500
S1=pd.Series(data=val)
print(S1)
```

a) 500
b) 1 500
c) 0 500
d) 2 500

13. Legal term to describe the rights of creator of original creative or artistic work is

a) Copyright
b) Copyleft
c) GPL
d) FOSS

14. With reference to SQL ,identify the invalid data type:

a) Date
b) Integer
c) Year
d) Month

15. By restricting the server and encrypting the data, a software company's server is unethically accessed in order to obtain sensitive information. The attacker the company to pay money for getting access to the data and threatens to publish   information unless price is paid. This kind of attack is known as:

a) Phishing
b) Identity theft
c) Plagiarism
d) Ransomware

16. .... is a non profit organisation that aims to build a publically accessible global platform where a range of creative and academic work is shared freely.

a) Creative cost
b) Critical commons
c) Creative commons
d) Creative common

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

a) Both A and R are True and R is the correct explanation for A.
b) Both A and R are True and A is not the correct explanation for A
c) A is True but R is False.
d) A is false but R is True

17. **Assertion (A):** Modem stands for Modulator demodulator

   Reason (R): It is a computer hardware device that converts the data from a digital   format to analog and vice versa.

18.**Assertion (A):**To use the pandas library in a python program one must import it.

   Reason (R): The only alias name that can be used with the pandas library is pd.

SECTION B

19.Briefly explain the concepts of a web browser and web hosting.

Or

  An international school is planning to connect all computers ,each spread over a distance within 45 meters. Suggest an economical cable type having high speed data transfer which can be used to connect these computers.

20.A data frame named Toppers is created with the following specifications

	NAME	MARKS
XII A	Anushman	92.4
XII B	Dipanshu	88.7
XII C	Harshwardan	90.2

Find the error in the following code statements:

a) >>>Toppers.del['XII C']
b) >>>Toppers.rename(index=['A','B,'C'])
c) >>>Toppers.rename(columns=[])

21. Consider the given SQL string:
  "12#All the Best!"

Write suitable SQL queries for the following:

a) Return the position of the first occurrence of the substring "the " in the given string.
b) To extract last five characters from the string.

22. Predict the output of the following python code
```
import pandas as pd
import NumPy as np
index=[5,3,2,6,8,7,1,4,9,10]
dat=np.arrange(20,40,2)
Df=pd.DataFrame(dat,index)
v1=Df.tail(3)
v2=Df.head(4)
v3=Df.loc[3:6]
print(v1)
print(v2)
print(v3)
```

23. Differentiate between active digital footprint and passive digital footprint.

24. What will happen if the index is not mentioned as a parameter of the Series() function.

25. what are aggregate functions in SQL? Name any two.

SECTION C

26. Based on the SQL table CAR_SALES write suitable queries for the following:

number	segment	fuel	Qt1	Qt2
1	Compact Hatchback	Petrol	56000	70000
2	Compact Hatch Back	Diesel	34000	40000
3	MUV	Petrol	33000	35000
4	MUV	Diesel	14000	15000
5	SUV	Petrol	27000	54000
6	SUV	Diesel	18000	30000
7	Sedan	Petrol	8000	10000
8	Sedan	Diesel	1000	5000

a) Display fuel wise average sales in the first quarter
b) Display segment wise highest sales in the second quarter
c) Display the records in the descending order of sales in the second quarter.

Or

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

a) SELECT LEFT(segment,2) FROM CAR_SALES WHERE FUEL='PETROL;
b) SELECT(Qt2-Qt1)/2 FROM CAR_SALES WHERE SEGMENT='SUV';
c) SELECT SUM(Qt1) FROM CAR_SALES WHERE FUEL="DIESEL";

27.Write python code to design a DataFrame with the following data:

	ENG	PHY	CHEM	MATHS
Suman	58	85	63	84
Prateek	67	76	57	72
Ankeesh	72	69	62	83
Swati	59	64	61	77
Pushkar	75	84	70	92
Varun	55	72	59	81

28. Rashmi a database administrator needs to display house wise total number of record of 'RED' and 'YELLOW' house. She is encountering an error while executing the following query.

SELECT HOUSE,COUNT(*) FROM STUDENT GROUP BY HOUSE WHERE HOUSE='RED' OR HOUSE='YELLOW';

Help her in identifying the reason of the error and write the correct quote by suggesting the possible correction.

29.Richu recently started using her social media account. Within a few days she be friends many people she knows and some that she does not know. After some time, she starts getting negative comments on her posts. She also finds that her picture are being shared online without her permission.

Based on the given information, answer the questions given below:
   a) Identify the type of cyber crime she is victim of.
   b) Under which act she can lodge a complaint to the relevant authorities.
   c) Suggest her any two precautionary measures which she should take in future while being online to avoid any such situations.

30.Write down the purpose of the following attributes and functions with the dataframe
   a) Index()
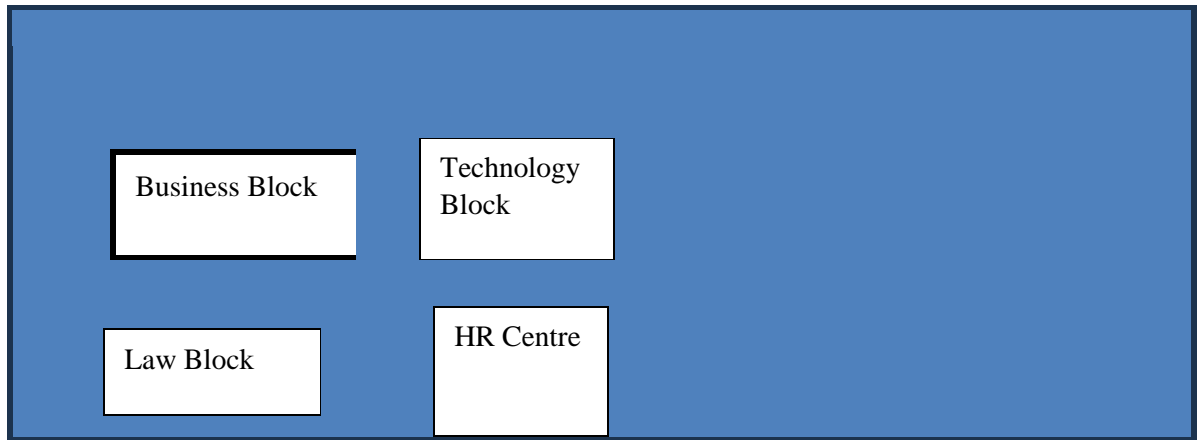   b) Ndim
   c) Shape
   d) Size
   e) dtypes

SECTION D

31.Preeti manages database in blockchain start up. For business purposes, she created a table named BLOCKCHAIN. Assist her by writing the following queries:

Id	User	Value	Hash	Transaction_date
1	Steve	900	ERTYU	2022-09-10
2	Meesha	145	@345r	2021-03-23
3	Nimisha	567	#wert5	2020-05-06
4	Pihu	678	%rtyu	2022-07-13
5	Kopal	768	Rrt43%	2022-05-15
6	Ravi	534	wer@3	2022-11-29
7	palakshi	223	%%123	2022-12-12

a) Write query to display the year of oldest transaction

b) Write a query to display the month of most recent transaction

c) Write a query to display all the transactions done in the month MAY

d) Write a query to count total number of transactions in the year 2022.

32.A university located at navi Mumabi wants to set up a network among its blocks/centres as shown below:

The distance from one block/centre to other and the number of computers available in each block are shown in the tables as below:

Law block to business block	40m
Law to Technology Block	80m

Law to HR centre	105m
Business to Technology Block	30m
Business to HR centre	35m
Technology to HR centre	15m

Name of the block/centre	No. of computers
Law Block	15
Technology Block	40
HR centre	120
Business Block	25

Based on the above, answer the following:

a) Which of the given blocks/centres will be suitable to place server? Give reason

b) Show the ideal layout for the wired connectivity of blocks/centres from the server.

c) Which of the communication devices will you use to guide transmission signal one computer to a specific computer?

d) Which type of network will you suggest to connect administrative office(located at New Delhi) to the university server?

33. Write suitable SQL queries for the following:

a) To calculate the exponent for 3 raised to power of 4.
b) To display current date and time.

c) To round the value -34.567 to 2 decimal places.

d) To remove all the probable leading and trailing spaces from the column user id of the table named user

e) To display the length of the string 'FIFA WORLD CUP'.

SECTION E

34. Kabir has created the following csv file named exam:

Regno	Name	Subject	Marks
1	Sanchay	CS	98
2	Vinesh	IP	100
3	Sneha	CS	90
4	sanya	IP	99
5	Akshita	IP	100

a) Read the CSV file into dataframe

b) Find those got marks above 85

c) Display the dataframe in row and column basis

d) Rename the column subject to sub

35. X=[10,12,13,9,5]

Y=[20,12,25,8,7]

X1=[12,13,14,15,16]

Y1=[9,10,11,7,8]

Plot a line graph using the above values with suitable titles , labels and colors.

Or

X=[20,30,40,50,60,70]
Bins=[40,50,60]
Plot a histogram with suitable attributes