Roll No…….. **Series JPR_PB/25-26/12/065/SET No.1**

NOTE:-

- Please check that this question paper contains 7 pages
- Please check that this question paper contain 37 questions
- Please write down the serial number of the question in the answer book before attempting it
- 15 minutes time has been allotted to read question paper .The students will read the question paper only and will not write any answer on the answer – book during this period.

CLASS: XII
INFORMATICS PRACTICES (065)

Time allowed: 3 Hours Maximum Marks: 70

General Instructions:

- All questions are compulsory.
- The examination paper contains five sections, from Section A to Section E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 4 questions (29 to 32). Each question carries 3 Marks.
- Section D consists of 2 questions (33 to 34). Each question carries 4 Marks.
- Section E consists of 3 questions (35 to 37). Each question carries 5 Marks.
- There is no overall choice. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

Q No.	**Section-A (21 x 1 = 21 Marks)**	Marks
1	State whether the following statement is True or False A dataframe can be thought of as a group of multiple series objects.	1
2	Consider the following SQL statement: What type of command is this: Delete from emp; a) DDL b) DML c) DCL d) Constraint	1
3	Which network topology is a combination of other two topologies? a)Star b) Bus c) Ring d) Tree	1
4	Which command allows to change the structure of an existing table like adding or removing column? a)Alter b) Update c) Modify d) Drop	1
5	What is e-waste? A) Organic waste from food products B) Discarded electronic devices and equipment C) Waste generated from manufacturing processes D) Non-recyclable plastics	1
6	Which of the following Python commands selects the first 4 rows of a DataFrame df, assuming that labelled index are consecutive integers starting from 0? (A) df.loc[:3] (B) df.loc[:2] (C) df.loc[0:4] (D) df.loc[1:4]	1
7	Which function lets you set the title of the plot? a) title() b) plottitle() c) graphtitle() d) None of these	1
8	State True / False Order by clause is used to arrange the query result in ascending order.	1

9	What will be the output of the following SQL query ? SELECT MID('INCREDIBLE INDIA',6,3); (A) EDI (B) RED (C) DIB (D) CREDIB	1
10	Which of the following is an example of cyber crime? A) Stealing a car B) Phishing for personal information C) Shoplifting from a store D) Vandalizing public property	1
11	Which operator tests a column for the absence of data i.e NULL values: a) EXISTS b) IS c) NOT d) =	1
12	Internet is an example of which type of network? a) PAN b) LAN c) MAN d) WAN	1
13	Function to add a new row in a dataframe is _____ a) .loc() b) .iloc() c) join() d) add()	1
14	The legal and regulatory aspects of the internet in India refers to _____ a) Cyber space b) Cyber crime c) Criminal law d) IT Act	1
15	Consider the code given below: import pandas as pd S=pd.Series(['a','b','c','d'],index=[100,101,102,103]) print(S[100] + S[102]) a) 100102 b) 102100 c) ac d) ab	1
16	In SQL, which function is example of scalar function? a) count () b) avg () c) ucase() d) max ()	1
17	Which of the following Python statements is used to write a Pandas DataFrame df to a CSV file? (a) df.to_csv() (b) df.write_csv() (c) df.to_table() (d) df.export_csv()	1
18	The ALTER command in SQL can be used to : (A) Alter data within a table (B) Delete data from a table (C) Modify the structure of a table (D) Create a new table	1
19	Which of the following devices is used to connect multiple networks together and direct data packets between them? a) Switch b) MODEM c) NIC d) Router	1
	Q20 and Q21 are Assertion(A) and Reason(R) 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 R is not the correct explanation for A (C) A is True but R is False (D) A is False but R is True	
20	Assertion (A):-The head() and tail() functions in pandas are used to display the first and last few rows of a series Reasoning (R): The head() and tail() functions in pandas are used to display the first and last few columns of a series.	1
21	Assertion (A): In SQL, INSERT INTO is a Data Definition Language (DDL) Command. Reason (R): DDL commands are used to create, modify, or remove database structures, such as tables.	

Q	Section-B (7 x 2=14 Marks)	Mark

<table>
<tr><th>No.</th><th></th><th>s</th></tr>
<tr><td>22</td><td>(A) Consider the following series object S_amt
Table 350
Chair 200
Sofa 800
Stool 150
Write code for the following:
i) To display the name of the furniture having rent > 250
ii) To name the series object as Furniture
OR
(B) Find the error in the code and write the reason for getting this error. Also write statement after correcting the error.
S2=pd.Series([111,123,345,890])
S2.index=[1,2,3,4,5]
print(S2)</td><td>2</td></tr>
<tr><td>23</td><td>What is digital footprint? Mention one disadvantage of it?</td><td>2</td></tr>
<tr><td>24</td><td>Write the output of the following queries:
(i)SELECT round(543.89,1);
(ii)SELECT Mod(5,10);</td><td>2</td></tr>
<tr><td>25</td><td>Briefly explain the concept of web server and web hosting? Identify the protocol name in the given URL: https://www.cbse.nic.in/index.html.

OR

Explain the concept of VoIP and mention one benefit of using it.</td><td>2</td></tr>
<tr><td>26</td><td>Differentiate between DDL and DML commands with example.</td><td>2</td></tr>
<tr><td>27</td><td>What is phishing?</td><td>2</td></tr>
<tr><td>28</td><td>Consider the DataFrame data given below and write code for the following:
i)To delete rows with labels Apple and Lime
ii)To delete the columns with labels color and count

<table><tr><th></th><th>Color</th><th>Count</th><th>Price</th></tr><tr><td>Apple</td><td>Red</td><td>3</td><td>120</td></tr><tr><td>Apple</td><td>Green</td><td>9</td><td>110</td></tr><tr><td>Pear</td><td>Green</td><td>25</td><td>125</td></tr><tr><td>Lime</td><td>Red</td><td>21</td><td>70</td></tr></table>
OR
Complete the code to get output ‘Rajasthan’
import _____ as pd
data=['Rajasthan', 'Assam', 'Meghalaya', 'Tamilnadu']
indx=['Jaipur', 'Dispur', 'Shillong', 'Chennai']
s=pd.Series(_____, _____)
print(_____)</td><td>2</td></tr>
<tr><th>Q No.</th><th>Section-D (4 x 3 = 12 Marks)</th><th>Marks</th></tr>
<tr><td>29</td><td>Mention any three categories of IPR with an example of each.</td><td>3</td></tr>
<tr><td>30</td><td>(A) Write code to create a dataframe to store weight,age and names of 3 people. Print the dataframe and its transpose.
OR
(B) What is the difference between the following two statements:
Df2=pd.dataframe(df1)
Df3 =pd.dataframe(df1.,copy=True)</td><td>3</td></tr>
</table>

31	Create a table **Purchase** with the given specifications: (ii) Write query to display the structure of the table.	3
32	Consider the following tables GAMES and PLAYER and answer the following parts of this question: Give the output of the following SQL queries: (i) SELECT COUNT (DISTINCT Number) FROM GAMES ; (ii) SELECT MAX(ScheduleDate), MIN(ScheduleDate) FROM GAMES ; (iii) SELECT Name, GameName FROM GAMES G, PLAYER P WHERE G.GCode = P.GCode AND G.PrizeMoney> 10000 ; **OR** Write SQL statements for the following: (i) Display GameName, Type, Number in descending order of PrizeMoney (ii) DisplayGCode, GameName, Type of Table Tennis (iii) Display GameName, Type, PlayerName of corresponding GCode	3

Column name	Datatype	Size	Constraint
CNO	Int	5	Primary key
CNAME	Varchar	25	
DOP	Date		
QUANTITY	Int	4	
CITY	Varchar	20	

GCode	GameName	Type	Number	PrizeMoney	ScheduleDate
101	Carrom Board	Indoor	2	5000	2004-01-23
102	Badminton	Outdoor	2	12000	2003-12-12
103	Table Tennis	Indoor	4	8000	2004-02-14
105	Chess	Indoor	2	9000	2004-01-01
108	Lawn Tennis	Outdoor	4	25000	2004-03-19

Pcode	Name	GCode
1	Nabi Ahmad	101
2	Ravi Sahai	108
3	Jatin	101
4	Nazneen	103

Q	Section-D (2 x 4 = 08 Marks)	Marks

No.		

33	The table below shows the marks of two students for the four unit tests for academic session 2019-2020. Fill in the blanks to draw a line graph with Test Names on the X-axis and marks on the Y-axis.
	
	TESTS / **MARKS** (Rohit, Suman)
	Unit1 85 97
	Unit2 88 99
	Unit3 89 90
	Unit4 87 92
	
	import matplotlib.pyplot as plt
	Tests = _____ #Assign Test Names
	Rohit = _____ #Assign Marks of Rohit
	Suman = _____ #Assign Marks of Suman
	plt.plot(Tests, Rohit)
	plt.plot(Tests, Suman)
	_____ #Label Y axis as Marks
	_____ #Add legends “Rohit”, “Suman” for the lines
	plt.show()
		4

34	Write SQL queries on the table LAB to display the following:	4

No	ItemName	CostPer Item	Quantity	Dateof Purchase	Warranty	Operational
1.	Computer	60000	9	1996-05-21	2	7
2.	Printer	15000	3	1997-05-21	4	2
3.	Scanner	18000	1	1998-08-29	3	1
4.	Camera	21000	2	1996-06-13	1	2
5.	Hub	8000	1	1999-10-31	2	1

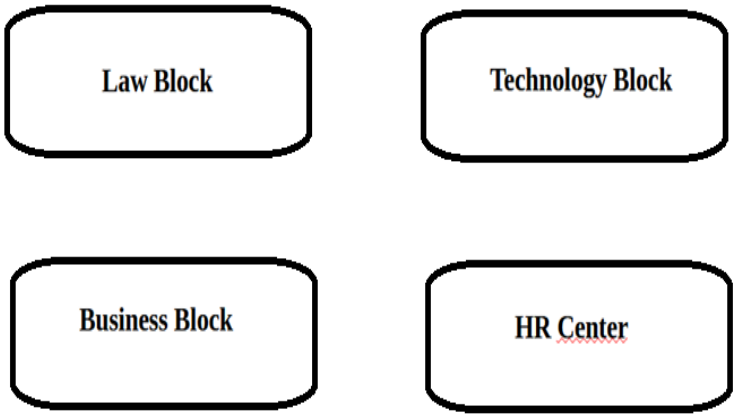
(i) To select the ItemName purchased after 1999-10-31
(ii) To list the ItemName in ascending order of the date of purchase where quantity is more than 3.
(iii) To display ItemName, CostPerItem and quantity whose warranty is greater than 2 .
(iv) To insert a new record in the lab table with the following data: 8, “VCR”, 10000, 2, '2000-02-02', 1, 2.

OR

(i) To display the item name and date of purchase of those items which are purchased in the month of May
(ii) To display the item names after removing trailing spaces;
(iii) To display the total quantity of items, warranty wise.
(iv) To display name of those items whose quantity is not given

Q No.	Section-E (3 x 5 = 15 Marks)	Marks
35	MyPace University is setting up its academic blocks at Naya Raipur and is	

planning to set up a network. The university has 3 academic blocks and one Human Resource Center as shown in the diagram below:



The distances between the various blocks are as follows:

From Block	To Block	Distance
Law Block	Business Block	40 m
Law Block	Technology Block	80 m
Law Block	HR Center	105 m
Business Block	Technology Block	30 m
Business Block	HR Center	35 m
Technology Block	HR Center	15 m

The number of computers located in each block or center is as follows:

Block / Center	Number of Computers
Law Block	15
Technology Block	40
HR Center	115
Business Block	25

(a) Suggest suitable place (i.e., Block/Center) to install the server of this University with a suitable reason.
(b) Suggest an ideal layout for connecting these blocks/centers for a wired connectivity.
(c) Which device will you suggest to be placed/installed in each of these blocks/centers to efficiently connect all the computers within these blocks/centers.

	(d) Suggest the placement of a Repeater in the network with justification. (e) The university is planning to connect its admission office in Delhi, which is more than 1250 km from university. Which type of network out of LAN, MAN or WAN will be formed? Justify your answer.	
36	Consider the following Data Frame prodf storing production in tonnes and answer the questions: <table><tr><th></th><th>FRUITS</th><th>PULSES</th><th>RICE</th><th>WHEAT</th></tr><tr><td>Tripura</td><td>44.1</td><td>23.2</td><td>814.6</td><td>0.5</td></tr><tr><td>Gujarat</td><td>11950.0</td><td>818.0</td><td>1930.0</td><td>2737.0</td></tr><tr><td>Punjab</td><td>7152.0</td><td>33.0</td><td>11586.2</td><td>16440.5</td></tr><tr><td>UttarPradesh</td><td>140169.2</td><td>2184.4</td><td>13754.0</td><td>30056.0</td></tr><tr><td>Andhra Pradesh</td><td>7830.0</td><td>931.0</td><td>7452.4</td><td>0</td></tr><tr><td>Kerala</td><td>113.1</td><td>1.7</td><td>2604.8</td><td>0</td></tr></table>Assuming that the dataframe prodf is available, write codes to do the following: I. Print the last three rows of the DataFrame. II. Add a new column named TOTAL that contains sum of FRUITS,PULSES,RICE,WHEAT columns . III. Drop the column "FRUITS" from the DataFrame. IV. Rename the column "RICE" to "PADDY". V. Display only the "PULSES" and "WHEAT" columns from the DataFrame.	5
37	(A) **Write suitable SQL queries for the following:** I. To display the last three characters from the Employee_Code column in the Employees table. II. To count the number of employees working in each department from the Department column in the Employees table. III. To extract the month from the Join_Date column in the Employees table. IV. To display the City column from the Customers table in uppercase. V. To find the maximum salary from the Salary column in the Employees table. **OR** (B) Write suitable query for the following: (i) To find the square root of 100 (ii) Round the value 15.79 to one decimal place (iii) To convert and display a string “STUDY MATERIAL” to lowercase (iv) To display the current date and time (v) To display the name of the month for the date “23-10-2024”	5