BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
PRE BOARD -01 EXAMINATION 2024-25

INFORMATICS PRACTICES (065)
MARKING SCHEME

Class : XII SCIENCE/COMMERCE/ARTS **Duration : 3 Hrs**
Date : 22-11-2024 **Max. Marks : 70**
Admission No.: **Roll No.:**

General Instructions:

Try to attempt all questions as per given order.

All questions are compulsory.

The Question Paper is divided into four sections Section A to D.

- Section A has 18 questions and carry 1 mark each.
- Section B has 10 questions and carry 2 marks each.
- Section C has 8 questions and carry 3 marks each.
- Section D has 2 questions and carry 4 marks each.

Section-A

1. How can individuals protect themselves from identity theft ? 1
(a) Share personal information freely on social media (b) Use the same password for all online accounts (c) Never check bank statements (d) Shred sensitive documents, use strong passwords, and monitor financial accounts

2. Which Python command can be utilized to create a histogram using the data in a list named that represents scores of students in an exam ? 1
(a) plt.hist(values) (b) seaborn.histplot(values) (c) plt.plot_histogram(values)
(d) numpy.histogram(values)

3. Which network topology typically results in less wire length usage as compared to others ? 1
(a) Star topology (b) Mesh topology (c) Bus topology (d) Hybrid topology

4. ____ is a cyber-attack method that involves sending fraudulent emails or messages to trick individuals into revealing sensitive information, such as login credentials or financial data ? 1
(a) Malware Infection (b) DDoS Attack (c) Phishing (d) SQL Injection

5. Which environmental issue is associated with electronic waste? 1
(a) Ocean Acidification (b) Air Pollution (c) Noise Pollution (d) Water Scarcity

6. To get the number of dimensions of a Series object, _____ attribute is displayed. 1
(a) Index (b) Size (c) Itemsize (d) Ndim

7. To iterate over horizontal subsets of dataframe, _____ function may be used. 1
(a) iterate (b) itercols (c) iterrows( ) (d) iteritems ( )

8. To display third element of a Series object S, you will write_____. 1
```
import pandas as pd
list1=[10,20,30,40,50]
S = pd.Series(list1)
print(S[ ])
```
(a) S[:3] (b) S[2] (c) S[3] (d) S[:2]

9. Which of the following command will show the last 3 rows from a Pandas Series named NP? 1
(a) NP.Tail( ) (b) NP.tail(3)
(c) NP.TAIL(3) (d) All of the above

10. Assertion (A) Cookies are small text files stored locally by the client's web browser to remember the "name value pair" that identifies the client. 1
Reason (R) Cookies are primarily used to track users' physical locations.
(a) Both A and R are true and R is the correct explanation for A
(b) Both A and R are true but R is not the correct explanation for A
(c) A is True but R is False
(d) A is false but R is True

11. In SQL, which of the following will select only one copy of each set of duplicate rows from a table. 1
(a) SELECT UNIQUE (b) SELECT DISTINCT (c) SELECT DIFFERENT (d) All of these.

12. Which of the following functions returns the substring from a given string ? 1
(a) Mid (b) Instr (c) Char (d) All of these

13. What will be returned by the given query ? 1
Select round(153.669,2);
(a) 153.6 (b) 153.67 (c) 153.66 (d) None of these

14. Assertion (A)Python Pandas library offers functionality to interact with a CSV file. 1
Reasoning(R)Pandas read_csv( ) and to_csv( ) functions can read-from and write-to CSV files.
(a) Both A and R are true and R is the correct explanation for A
(b) Both A and R are true but R is not the correct explanation for A
(c) A is True but R is False
(d) A is false but R is True

15. Identify FOSS from the following: 1
(a) MS Windows (b) CorelDraw (c) Photoshop (d) Linux

16. Which SQL function is used to count the number of rows in a SQL query ? 1
(a) Number (b) Count(*) (c) Sum( ) (d) Count( ) (e) All of these

17. To create summary results, _____ clause is used. 1
(a) Sort by (b) Summary by (c) Group by (d) Order by

18. In which type of join, the join condition contains an equality operator ? 1
(a) Equijoin (b) Natural (c) Left Join (d) Right Join

Section- B

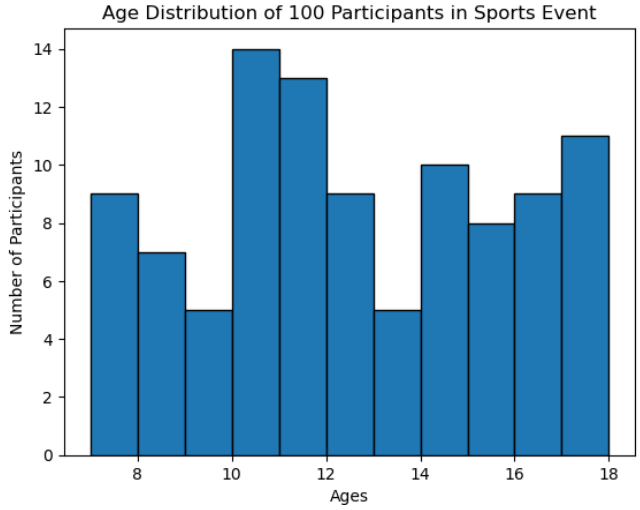
19. Rashi has just started using internet. Mention her any four net etiquette which she should follow in order to become a good netizen.
OR 2
Mention any four communication etiquette which one should follow while communicating on the internet.

20. Given dataframe 'Product', Write the python code for the following: 2

	Item	Company	Rupees	USD
0	Laptop	Dell	50000	600
1	Smartphone	Apple	75000	900
2	Tablet	Samsung	30000	360
3	Headphones	Sony	15000	180

a) To add a new row in the above dataframe. (Values: AC, DAIKIN,15000,800)
b) To display the sum of all Products.

21. Create a histogram of the given data. It shows participants of students between the age bracket of 7 and 18. 2



22. Choose the most appropriate wireless communication channel in each of the following situations : 2
(i) Communication in hilly area.
(ii) Very fast communication between two offices in two different countries.

OR

Define the term hub. Also explain the brief active hubs and passive hubs.

23. Differentiate between iterrows( ) and iteritem( ) function with example. 2

24. Predict the output of the following queries : 2
i. SELECT INSTR(RIGHT('EXAM@2022', '2');
ii. SELECT MID('KENDRIYA VIDYALAYA',10,5);
OR
Write any two Date/Time Function in SQL with proper example ?

25. Write SQL queries to do the following function: 2
(a) To add a new column "Aadhar_Number" datatype varchar(16) in a table "STUDENT".
(b) To remove a column "Middle_Name" from a table "STUDENT".

26. Write a SQL query to display the number of employees with same job ? 2
Note: Table Name:- Employee, Fields : Job

27. Write the output from the given python code : 2

```
import matplotlib.pyplot as plt
Months=['Dec',' 'Jan', ,'Feb','Mar']
Attendance=[70,90,75,95]
plt.bar(Months, Attendance)
plt.xlabel("Months")
plt.ylabel("Attendance")
plt.title("Monthwise Attendance")
plt.show()
```

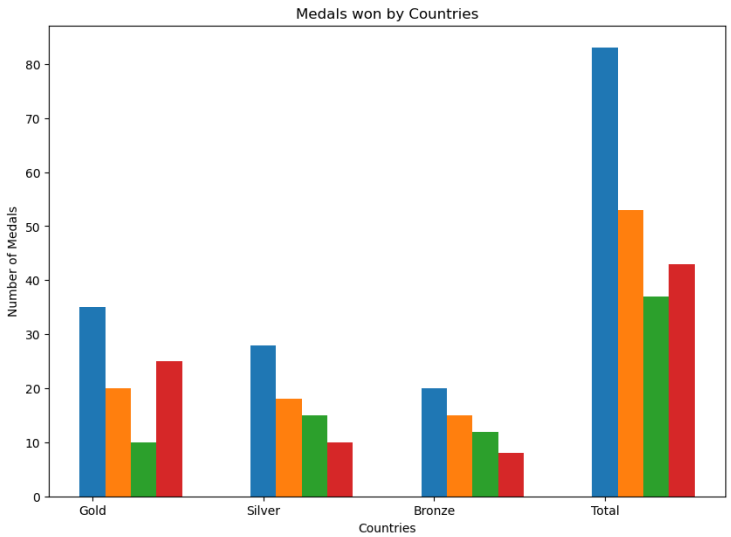
28. Predict the output of following code fragments. For every next code fragment, consider that the changes by previous code fragment are in place. That is, for code fragment (b), changes made by code fragment (a) are persisting; for (c), changes by (a) and (b) are persisting and so on. 2

```
(a) import pandas as pd
columns=['2015','2016','2017','2018']
index=['Messi','Ronaldo','Neymar','Hazard']
df=pd.DataFrame(columns=columns,index=index)
print(df)
df.to_csv("c:\\one.csv")
(b)
df['2015']['Messi']=12
df['2016','Ronaldo']=11
df['2017']['Neymar']=8
df['2018']['Hazard']=16
print(df)
df.to_csv("c:\\two.csv",sep='@')
```

Section-C

29. Consider the given SQL QUERIES and write only the SQL function name: 3
(i) To retrieve the length of the given string "CBSE BOARD SQP 2024!".
(ii) To find out if **symbol** @ is present in the values of email id column or not.
(iii) To display the name of month in which you were born.

30. Write a python program to create a multiple bar charts as given below: 3
Countries representing in order (1 : Australia, 2: England, 3: India, 4: China) for each medal.



31. Write a SQL command to create a table “VEHICLES” . Identify Primary Key and Not Null. 3

Field	Type	Null	Key	Default
Vehicle_No	varchar(20)	NO	PRI	NULL
Type	varchar(50)	YES		NULL
Company	varchar(50)	YES		NULL
Price	decimal(10,2)	NO		NULL
Qty	int	YES		NULL

32. What is the purpose of GROUP BY clause in MySQL? How is it different from ORDER BY clause? 3

33. Imagine a scenario where an individual, Alex, is concerned about his online privacy. 3
Alex has a social media presence and frequently posts updates, photos, and comments on various platforms. Additionally, Alex frequently uses mobile apps and visits websites for shopping and information.
a. Explain the concept of an active digital footprint, providing examples from Alex’s online activities.
b. Describe the concept of a passive digital footprint and provide examples of how it is generated in Alex’s online interactions.
c. Discuss the implications of both active and passive digital footprints for Alex’s online privacy and security.
OR
With reference to 3R’s, describe three essential approaches to manage electronic waste. Also, provide practical examples of how individuals can actively participate in each approach.

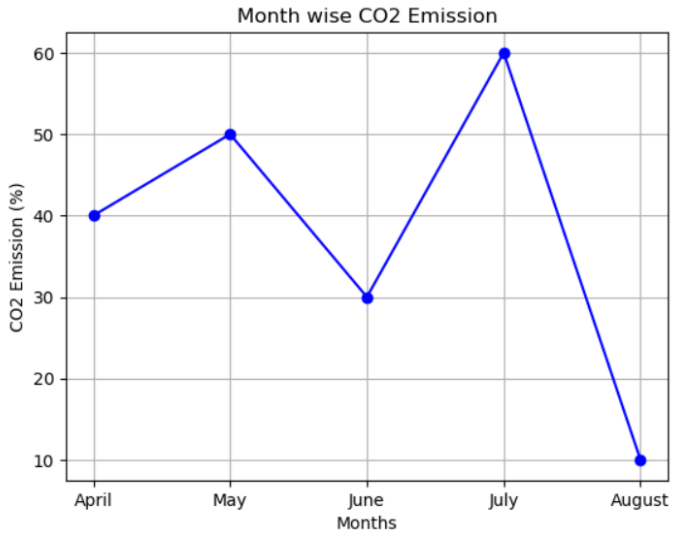
34. Write a program in python to create a DataFrame using any method like list, dictionary. 3

	A	B	C	D
Acct	99	94.0	92	97.0
Eco	90	94.0	92	97.0
Eng	95	89.0	91	89.0
IP	94	NaN	99	95.0
Math	97	100.0	99	NaN

35. The height of 10 students of eighth grade are given below: 3
Height_cms=[145,141,142,142,143,144,141,141,143,144]
Write suitable Python code to generate a histogram based on the above data, along with an appropriate title and both axis labels.
Also give suitable python statement to save this chart.

OR

Write suitable Python code to create ‘the following line chart “CO_2 Emission” having title and label for X and Y axis as shown below:



36. Viruses, Pharming and Phishing are all examples of potential internet security issues. Explain what is meant by each of these three terms.

Section-D

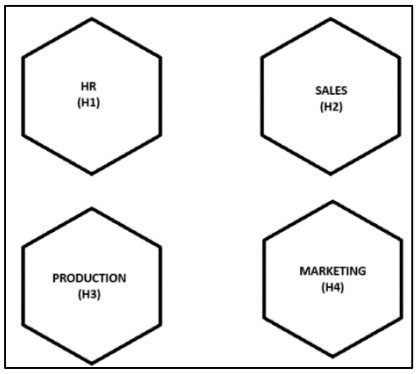
37. A relation **Vehicles** is given below: 4

Vehicle_No	Type	Company	Price	Qty
MH12AB1234	Car	Toyota	800000.00	10
DL9C9876	Bike	Honda	90000.00	15
KA05MH6789	Truck	Tata	1500000.00	5
AP16JK1234	Bus	Ashok Leyland	2500000.00	2
GJ18QR5678	Car	Maruti Suzuki	650000.00	12
TN07ZL3456	Bike	Royal Enfield	150000.00	8

Write SQL queries :
(i) Display the average price of each type of vehicle having quantity more than 10.
(ii) Count the type of vehicles manufactured by each company.
(iii) Display the total price of all the types of vehicles.
(iv) Increase the price by 5%.

38. "TCS tech, Bengaluru" is a company that deals with software development. They have different divisions HR (H1), Sales (H2), Production (H3) and Marketing (H4). The layout of the Bengaluru branch is : 4

Distance between the divisions are as follows:
H1 to H2 – 76 m
H1 to H3 – 185 m
H1 to H4 – 88m
H2 to H3 – 140 m
H2 to H4 – 125 m
P to D 150m
Numbers of computers in each division:
H1 – 140
H2 – 340
H3 – 180
H4 – 260



Based on the above specifications, answer the following questions:

(a) Suggest the topology and draw the most efficient cable layout for connecting all the divisions of Bengaluru branch.

(b) TCS tech, Bengaluru is expanding its reach and therefore it establishes a new office in Delhi. Out of LAN, WAN and MAN, what type of network will be formed to connect Bengaluru office with Delhi office.

(c) Suggest the division for the placement of server in Bengaluru branch. Explain the reason for your selection.

(d) Suggest the placement of the following devices in Bengaluru branch :

(i) Repeater

(ii) Hub/Switch

(e) The company's manager Ms. Ritu is worried as how she can extend and modify the functionality of the web browser. Help her by giving names of any two tools.

******* BEST OF LUCK *******