BUDHA DAL PUBLIC SCHOOL, PATIALA

TERM-I EXAMINATION (SEPT. 2025) SET:-A

CLASS: - XII, SUBJECT: - INFORMATICS PRACTICES (CODE:- 065)

Time: 3 Hours **Max. Marks: 70**

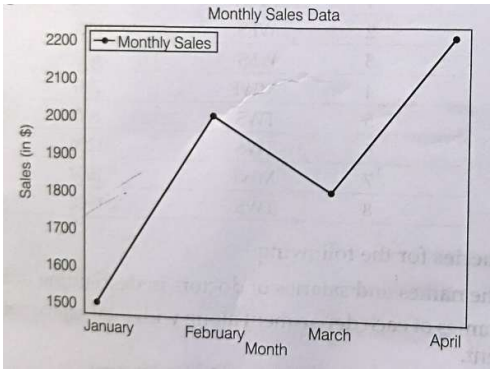
General Instructions:

1. **This question paper contains 37 questions.**
2. **All questions are compulsory.**
3. **The paper is divided into 5 Sections- A, B, C, D and E.**
4. **Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.**
5. **Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.**
6. **Section C consists of 4 questions (29 to 32). Each question carries 3 Marks.**
7. **Section D consists of 2 questions (33 to 34). Each question carries 4 Marks.**
8. **Section E consists of 3 questions (35 to 37). Each question carries 5 Marks.**

	SECTION-A	
1.	There are numerous websites, which provide search facility for searching the contents on a) LAN b) Internet c) Website d) Web page	1
2.	The Gyan international school has installed 40 computers in its Computer lab. Choose the correct deviceto form a LANnetwork involving the 40 computers. a) Switch b) Hub c) Gateway d) Repeater	1
3.	In given code dataframe 'Df1' has _____ rows and _____ columns. import pandas as pddict= [{'a':10, 'b':20}, {'a':5, 'b':10, 'c':20},{'a':7, 'd':10, 'e':20}] Df1 = pd.DataFrame(dict) a) None of these b) 3, 4 c) 3, 5 d) 3, 3	1
4.	A browser is a) the program to create websites b) the program to connect to internet c) the program used to view sites on web d) All of these	1
5.	Which of the following will you suggest to establish the real-time textual communication between the people. a) Chatting b) E-mail c) Real time communication is not possible d) Video Conferencing	1
6.	In order to work with Pandas in Python, you need to _____library in your program. To create a series object, ____method is used.	1
7.	A dataframe is a 1D array-line object containing an array of data and an associated array of data labels. (True/False) To access subset of a dataframe , we can us loc[] and iloc[] methods. (True/False)	1
8.	Which network device regenerates and retransmits a week signal? (i) Router (ii) Hub (iii) Repeater (iv) RJ-45	1
9.	Television cable network is an example of : (i) LAN (ii) WAN (iii) MAN (iv) Internet	1
10.	CSV Stands for : (i) Comma Separated Values (ii) Comma Separated Variables (iii) Column Separated Values (iv) Column Separated Variables	1
11.	Which method would you use to sort a DataFrame by the values of a specific column in ascending order?	1

	(a) sort() (b) order() (c) sort_values() (d) sort_index()	
12.	Which of the following reads data from csv files? (a) get_csv() (b) read_csv() (c) csv_read() (d) read()	1
13.	Which of the following allows you to connect and login to a remote computer? (a) SMTP (b) HTTP (c) FTP (d) Telnet	1
14.	A two –dimensional labeled array that is an ordered collection of columns to store heterogeneous data types is: (a) Series (b) NumPy array (c) Dataframe (d) Panel	1
15.	In which topology are all the nodes connected through a single Coaxial cable? (a) Star (b) Tree (c) Bus (d) Ring	1
16.	The part of chart which identifies different sets of data plotted on plot by using different colors is called: (a) Legends (b) title (c) axes (d) figure	1
17.	Which argument must be set with plotting functions for legend() to display the legends? (a) data (b) label (c) name (d) sequence	
18.	Which of these is not a communication channel? (i) Satellite (ii) Microwave (iii) Radio Wave (iv) Wi-Fi	
19.	Which is a Python package used for 2D graphics? a) matplotlib.pyplot b) matplotlib.pip c) matplotlib.numpy d) matplotlib.plt	
	Q20 and 21 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 R is not the correct explanation for A** c) **A is True but R is False.** d) **A is False but R is True.**	1
20.	**Assertion (A)** DataFrame has both a row and column index. **Reason (R)** A DataFrame is a two-dimensional labelled data structure like a table of MySQL.	
21.	**Assertion (A):** A Repeater is a device that amplifies the network over geographical distance. **Reasoning(R):** A Hub is device which is used to connect more than one device in the network.	1
	SECTION-B 7X2=14	
22.	Name any two most popularly used Internet browsers.	2
23.	import pandas as pd name=['Raj','Ankur','Harsh'] p=pd.Series(name,index=[2,5,6]) print(p) p1=p.reindex([2,4,5]) print (p1)	2
24.	What is VoIP?	2
25.	Give two guidelines to prevent the virus attack.	2
26.	List some benefits of networking. Name any two components required for networking.	2

27.	What is Pandas Series?	2
28.	What will be the output of the following code: Import pandas as pd s1=pd.Series([1,2,3,6,'Aman',88.5]) print(s1.head(3))	2
	SECTION-C 4X3=12	
29.	Write a Python code to create a DataFrame with appropriate headings from the list given below: ['S101', 'Amy', 70], ['S102', 'Bandhi', 69], ['S104', 'Cathy', 75], ['S105', 'Gundaho', 82]	3
30.	What is data visualization? What is its significance?	3
31.	What is modem? What are the two types of Modem?	3
32.	Explain the difference between the `head()` and `tail()` functions in Pandas.	3
	SECTION-D 2X4=8	

33	During a practical exam, a student, Ravi, has to fill in the blanks in a Python program that generates a line chart. This line chart represents the monthly sales of a store over four months.
	Month **Sales (in $)**
	January 1500
	February 2000
	March 1800
	April 2200
	Help Ravi to complete the code.
	 
	
	import _____as plt #Statement-1
	months = ['January', 'February'. 'March', 'April']
	sales [1500, 2000, 1800, 2200]
	plt.plot(months,_____ marker='o', label='Monthly Sales') #Statement-2
	plt.xlabel('Month')
	plt._____ ('Sales (in $)') #Statement-3
	plt.legend()
	plt.title('_____ ') #Statement-4
		4

plt.show( )

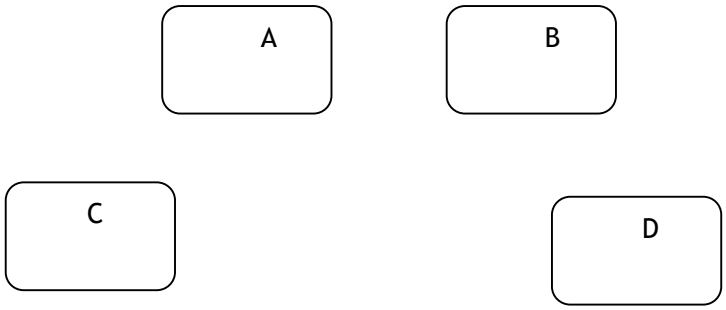
I. Write the suitable code for the import statement in the blank space in the line marked as Statement-1.
II. Refer to the graph shown above and fill in the blank in Statement-2 with suitable. Python code.
III. Fill in the blank in Statement-3 with the name of the function to set the label on the y-axis.
IV. Refer to the graph shown above and fill the blank in Statement-4 with a suitable chart title.

34. Define the following data communication deceives. 4
(a) Repeater (b) Bridge

SECTION-E 3X5=15

33. What is meant by topology? Explain bus and star topology with diagrams. 5

34. Convent School has 4 buildings in its campus. Distance between the buildings and the number of computers in each is given below 5



Building	Number of Computers
A	150
B	10
C	25
D	30

Building	Distance
A-B	10 m
A-C	1250 m
A-D	25 m
B-C	30 M
B-D	2000M

(i) Which building is best suitable for placement of server?
(ii) If building A to D is to be connected, which device will be required for strong signals?
(iii) Which building would need a switch/hub?
(iv) Which topology would you suggest for connecting computers in each building?
(v) Draw cable layout to efficiently connect various buildings within the school campus

	for a wired connectivity.	
35.	Write a program to plot a bar chart to depict the changing weekly onion prices for four weeks. Give appropriate axes labels. Week=[1,2,3,4] Price=[50,100,150,90]	5