

BUDHA DAL PUBLIC SCHOOL, PATIALA

TERM-I EXAMINATION (SESSION 2024-25) SET:-A

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

Time: 3 Hours

Max. Marks: 70

General Instructions:

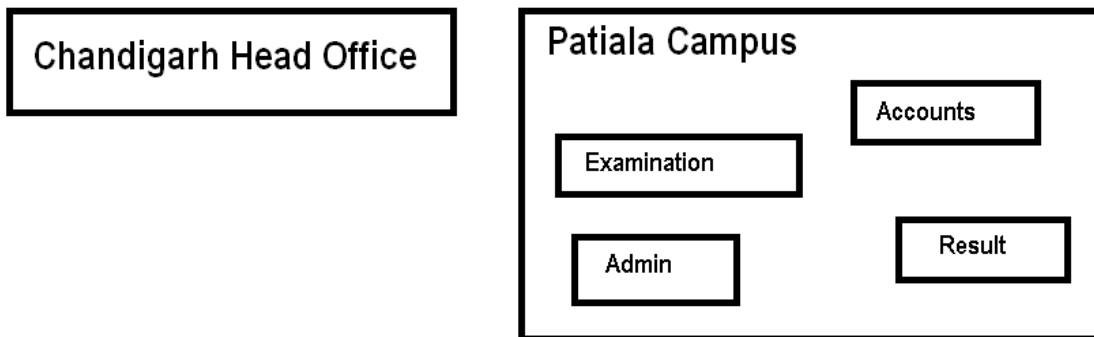
1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. 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		
Fill in the Blanks:-		
1.	In order to work with Pandas in Python, you need to _____ library in your program	1
2.	_____ is the text that appears on the top of the plot and defines what the chart is about.	1
3.	A _____ is a real-time communication via keyboard between two or more users over the internet.	1
State Whether the following statements are True or False:-		
4.	A dataframe is a 1D array-line object containing an array of data and an associated array of data labels.	1
5.	To save the plot, we have to use save_graph () function.	1
6.	A repeater handles different protocols.	1
Multiple Choice Questions(MCQs):-		
7.	Which network device regenerates and retransmits a weak signal? (i) Router (ii) Hub (iii) Repeater (iv) RJ-45	1
8.	Which network device connects dissimilar networks? (i) Router (ii) Gateway (iii) Bridge (iv) Repeater	1
9.	Television cable network is an example of : (i) LAN (ii) WAN (iii) MAN (iv) Internet	1
10.	In which topology are all the nodes connected through a single Coaxial cable? (i) Star (ii) Tree (iii) Bus (iv) Ring	1
11.	Which Python package is used for 2D Graphics ? (i) Matplotlib.pyplot (ii) matplotlib.pip (iii) matplotlib.numpy (iv) matplotlib.plt	1
12.	The part of chart which identifies different sets of data plotted on plot by using different colors is called: (i) Legends (ii) title (iii) axes (iv) figure	1
13.	A two –dimensional labeled array that is an ordered collection of columns to store heterogeneous data types is: (i) Series (ii) NumPy array (iii) Dataframe (iv) Panel	1
14.	CSV Stands for : (i) Comma Separated Values (ii) Comma Separated Variables (iii) Column Separated Values (iv) Column Separated Variables	1
15.	Which of the following commands is used to install Pandas? (i) Pip install python-pandas (ii) pip install pandas (ii) Python install python (iv) python install pandas	1

16.	The most popular data visualization library in python is : (i) pip (ii) matinfolib (iii) matplotlib (iv) matpiplib	1
	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 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
17.	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.	
18.	Assertion (A): Dataframe has both a row and column index. Reasoning(R): Dataframe is a two-dimensional labeled data structure like a table or MYSQL.	1
SECTION-B		
19.	What is Pandas Series?	2
20.	Write a single-line Pandas statement to declare a Pandas series named S Having data Set as: (44,65,35,77,87,90)	2
21.	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
22.	What is Matplotlib?	2
23.	Define a network. Why is it needed?	2
24.	Define the terms. Web Page and Home Page.	2
25.	What is the difference between Email and Chat?	2
SECTION-C		
26.	Write the output of the following code: Import pandas as pd data=[['Aman',10], ['Raj',12], ['Sunil',13]] df=pd.DataFrame(data,columns=['Name','Age'],dtype=float) print(df)	3
27.	What is data visualization? What is its significance?	3
28.	What is modem? What are the two types of Modem?	3
29.	Why is the following code not producing any result? Why is it giving error.(Note that all required libraries have been imported and are available). a=range(10, 50, 12) b=range(90, 200 , 20) matplotlib.pyplot.plot(a,b)	3
30.	Explain the difference between the head() and tail() functions in Pandas.	3
SECTION-D		
31.	Define the following data communication deceives. (a) Repeater (b) Bridge	4
32.	Differentiate between a router and a switch.	4
SECTION-E		
33.	What is meant by topology? Explain bus and star topology with diagrams.	5
34.	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=[40,80,100,70]	5

35. Sidhu Computer Services Ltd. Is an international educational organization. It is planning to set up its India campus at Patiala with its head office in Chandigarh. The Patiala Office campus has four main buildings-ADMIN, ACCOUNTS, EXAMINATION and RESULT. You as a network expert have to suggest the best network-related solutions for their problems raised in (i) to (v), keeping in mind the distances between the buildings and other given parameters.

5



Shortest distances between various buildings:-

ADMIN TO ACCOUNTS	55 m
ADMIN TO EXAMINATION	90 m
ADMIN TO RESULT	50 m
ACCOUNTS TO EXAMINATION	55 m
ACCOUNTS TO RESULT	50 m
EXAMINATION TO RESULT	45 m
CHANDHIGARH HEAD OFFICE TO PATIALA CAMPUS	70 KM

Number of computers installed at various buildings.

ADMIN	110
ACCOUNTS	75
EXAMINATION	40
RESULT	12
CHANDIGARH HEAD OFFICE	20

- Suggest the most appropriate location of the server inside the Patiala campus (out of the four building) to get the best connectivity for maximum number of computers. Justify your answer.
- Suggest and draw cable layout to efficiently connect various buildings within the Patiala campus for a wired connectivity.
- Which networking device will you suggest to be procured by the company to interconnect all the computes of various buildings of the Patiala campus?
- The company is planning to get its websites designed which will allow students to see their results after registering themselves on its server. Out of the static or dynamic which type of website will you suggest?
- Which of the following will you suggest for online face-to-face communication between the people in the ADMIN office of Patiala campus and Chandigarh Head Office?
 - Cable TV
 - Email
 - Video Conferencing
 - Text chat