Brain International School

Vikas Puri, New Delhi

REVISION SHEET

SUBJECT: INFORMATICS PRACTICES CLASS-XII TERM 1

1. PYTHON PANDAS 1

1. Which Python library is mainly used for data manipulation and analysis?
   a) NumPy b) Pandas c) Matplotlib d) Seaborn
2. What data structure is created by `pd.DataFrame()`?
   a) Array b) DataFrame c) Series d) Dictionary
3. Pandas Series is a one-dimensional labeled array. What is a DataFrame?
   a) 1D array b) 3D array c) 2D labeled data structure d) None of these
4. Which method is used to select rows or columns by labels?
   a) iloc b) loc c) select d) head
5. What function returns the first five rows of a DataFrame?
   a) tail() b) head() c) start() d) first()
6. Which parameter in pandas `drop()` is used to specify columns?
   a) axis=0 b) axis=1 c) axis=2 d) columns=0
7. To reindex rows in a DataFrame, which method is used?
   a) reset_index() b) reindex() c) reset() d) index()
8. Which method is used to remove missing values from a DataFrame?
   a) fillna() b) dropna() c) isnull() d) notnull()
9. How to create a Pandas DataFrame from a dictionary?
   a) pd.to_dict() b) pd.DataFrame() c) pd.from_dict() d) pd.Series()
10. Pandas Series can hold:
    a) Int only b) Float only c) Mixed data types d) Objects only
11. Write Python code to create a Series object named `s` with values [2,3,4,5,6] .
12. Write python code to create the following series using Dictionary:

101	Harsh
102	Arun
103	Ankur
104	Harpahul
105	Divya
106	Jeet

13. Differentiate between a Series and a DataFrame.
14. Write the output of the following code, considering the Series sr as given below

0	Computer
1	Maths
2	Science
3	English
4	Hindi
5	Social Science

1. print (sr[3 : 5])
2. print (sr. values)
3. print (sr[0 : 2])

15. Write a program in Python Pandas to create the following DataFrame "population" from a dictionary.

	country	population	percent
IT	Italy	61	0 · 83
ES	Spain	46	0 · 63
GR	Greece	11	0 · 15
FR	France	65	0 · 88
PO	Portugal	10	0 · 14

Perform the following operations on the above dataFrame:

a. Display all the rows where the population is more than 40.
b. Delete the last 2 rows.

2. VISUALISING DATA USING MATPLOTLIB

1. Which module of matplotlib is commonly used for plotting?
   a) matplotlib.pyplot b) matplotlib.pylab c) pandas.plot d) seaborn
2. Which type of chart is best for comparing categorical data?
   a) Line b) Pie c) Bar d) Scatter
3. What command creates a simple line graph in matplotlib?
   a) bar() b) scatter() c) plot() d) hist()
4. Which function sets the title of a plot?
   a) set_title() b) title() c) plot_title() d) setTitle()
5. What functions set labels for x and y axes?
   a) xlabel(), ylabel() b) set_x(), set_y() c) axis_labels() d) set_labels()
6. Which parameter customizes markers on a plot?
   a) linestyle b) color c) marker d) style
7. How do you display a plotted graph?
   a) display() b) show() c) draw() d) render()
8. Which type of plot shows frequency distribution of numeric data?
   a) Bar b) Histogram c) Line d) Pie
9. Which of these are matplotlib plot types?
   a) Bar only b) Line only c) Bar and Line d) 3D only
10. Which function saves a plot to an image file?
    a) save() b) write() c) savefig() d) export()
11. What is matplotlib? Write command to install matplotlib library
12. How to set labels for x-axis and y-axis?
13. How to display a plot after creating it?

3. IMPORTING AND EXPORTING DATA BETWEEN CSV

1. Which pandas function is used to read CSV files?
   a) open_csv() b) read_csv() c) load_csv() d) get_csv()
2. What is the data structure returned by pandas `read_csv()`?
   a) Series b) DataFrame c) List d) Dictionary
3. Which function is used to export DataFrame to a CSV file?
   a) export_csv() b) write_csv() c) to_csv() d) save_csv()
4. Which parameter in `read_csv` specifies if the first row is the header?
   a) header b) index_col c) sep d) columns
5. What parameter defines the delimiter in a CSV file?
   a) separator b) split c) sep d) delim
6. Write code to import a CSV file named 'myfile.csv' to dataframe.
7. How do you export a DataFrame `df` to a CSV file 'out.csv' without index?
8. What does the parameter `index_col` do in `read_csv()`?
9. How to skip the first 2 rows while reading a CSV file?
10. How to read a CSV with no header?
11. What parameter specifies the separator/delimiter while reading CSV?
12. Which method shows the first 5 records of imported data?
13. How to export CSV data without the index column?.

4. COMPUTER NETWORKS

1. What is the full form of LAN?
   a) Local Area Network b) Large Area Network c) Linked Area Network d) Line Area Network
2. Which device interconnects different networks?
   a) Hub b) Switch c) Router d) Bridge
3. What does IP address uniquely identify?
   a) Computer Name b) Network c) Device on a network d) Router
4. What is a protocol in networking?
   a) Hardware b) Software c) Set of rules for communication d) A device
5. Which of the following is an example of the Internet?
   a) LAN b) WAN c) MAN d) PAN
6. Which device broadcasts data to all connected devices?
   a) Switch b) Hub c) Router d) Bridge
7. Which term describes a small unit of data sent over a network?
   a) Packet b) Frame c) Message d) Signal

8. Which transmission medium uses pulses of light?
   a) Twisted Pair b) Fiber Optic c) Coaxial Cable d) Wireless
9. What is a firewall?
   a) A router b) Security system to block unauthorized access c) Network cable d) Network switch
10. Which protocol is used for transmitting web pages?
    a) FTP b) HTTP c) SMTP d) DNS
11. Define network topology. Name two types.
12. State two differences between LAN and WAN.
13. What is IP address?
14. What is WiFi?
15. What is the role of a router in networking?
16. Define MAC address.
17. What does a switch do in a network?
18. Name two common network devices.
19. What is the full form of ISP?
20. Define network security.
21. Explain star and bus topology with simple diagrams.
22. Mention three differences between IPv4 and IPv6.
23. Name and describe three types of transmission media used in networking.
24. What is network security? List any two methods to achieve it.
25. Explain the functions of hub, switch, and router.

5. SOCIETAL IMPACTS

1. What is a digital footprint?
   a) Physical footprint b) Data about user's online activity c) Internet service provider d) Security software
2. Cyberbullying involves:
   a) Physical bullying b) Online harassment c) Legal action d) Privacy settings
3. Data privacy means:
   a) Sharing data publicly b) Protection of personal data c) Data loss d) Hacking
4. Intellectual property rights protect:
   a) Physical property b) Digital data c) Creative works d) Software only
5. Digital divide refers to:
   a) Internet speed b) Difference in access to technology c) Software licenses d) Online safety
6. Information overload means:
   a) Too much data to process b) No data available c) Only trusted data used d) Virus infection
7. Online fraud includes:
   a) Data backups b) Scams and deception c) Password protection d) Downloading files
8. Phishing is an attempt to:
   a) Hack servers b) Steal sensitive information c) Surf the web d) Encrypt files

9. Social media addiction results in:
   a) Increased productivity b) Reduced screen time c) Uncontrolled usage d) Better relationships
10. E-waste is:
    a) Paper waste b) Electronic device waste c) Food waste d) None of these
11. Define digital footprint.
12. What is cyberbullying?
13. Explain data privacy.
14. What are intellectual property rights?
15. Define digital divide.
16. What is e-waste?
17. Differentiate between hacking and phishing.
18. What is digital etiquette?
19. Define plagiarism.
20. Mention two social issues related to technology.
21. List three netiquette rules for online communication.
22. Explain social media addiction and its effects.
23. List three steps to protect data security.
24. Discuss benefits and drawbacks of a digital society.
25. Suggest ways for sustainable and responsible use of technology.