ST. JOSEPH PUBLIC SCHOOL

Kota Barrage Road, Kota-6 (Raj.)

C.B.S.E. New Delhi, **INFORMATICS PRACTICES** **SOLUTIONS**

Class: **XII** **2025-26**

MM: **70**

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- The paper is divided into 5 Sections - A, B, C, D and 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.
- All programming questions are to be answered using Python language only.
- In case of MCQ, text of the correct answer should also be written.

MARKING SCHEME

Q No	Section-A (21x1 = 21 marks)	Marks
1	D) ALL OF THE ABOVE	1
2	B) PRIMARY	1
3	C) MAN	1
4	2	1
5	Digital Footprints	1
6	(b) inner dictionary's keys	1
7	b) plot()	1
8	c)Null value	1
9	(d) <DF> = pandas.read_csv(<files>)	1
10	b) Intellectual Property Right	1
11	(c) 153.67	1
12	Google Chrome, Internet Explorer, Mozilla Firefox, Atlas, Safari or any other relevant web browser.	1
13	b) iteritems()	1
14	c)Unused old computers	1

15	0 4 1 6 2 8 3 10 4 Ravi dtype: object	1
16	c)To find the position of a substring in a string	1
17	(c) 3, 5	1
18	(d) matplotlib.pyplot	1
19	Modulator Demodulator	1
20	(A) Both A and R are True, and R correctly explains A.	1
21	(C) A is True, but R is False.	1
	Section - B (7x2 = 14 marks)	
22	(A) A Series is a one-dimensional array containing a sequence of values of any data type (int, float, list, string, etc) which by default have numeric data labels starting from zero. We can imagine a Pandas Series as a column in a spreadsheet. An example of a series containing the names of students is given below: Index Value 0 Arnab 1 Samridhi 2 Ramit 3 Divyam (1 mark for correct definition) (1 mark for correct example) OR (B) Library: A collection of modules providing functionalities for specific tasks. Pandas: Used for data analysis Matplotlib: Used for creating plots (1 mark for correct definition) (1/2 mark each for correct use of each library)	2
23	Website A website is a collection of webpages and related content that is identified by a common domain name and published on a web server. - Website is a collection of webpage whereas web page is an individual page and part of a website - Website has domain name whereas webpage URL to access it - Website is larger than a webpage - Website takes longer to develop as compared to web page	2

	1 mark for definition and 1 mark for any two correct point of difference	
24	In database management an aggregate function is a function where the values of multiple rows are grouped together as input on certain criteria to form a single value of more significant meaning. 1m for proper explanation Any two from given below . 1m for each aggregate function 1) Count() 2) Sum() 3) Avg() 4) Min() 5) Max()	2
25	(A) URL stands for Uniform Resource Locator. It provides the location and mechanism (protocol) to access the resource, available on the web. URL is sometimes also called a web address. Example: http://www.ncert.nic.in (1 mark for URL explanation, and 1 mark for any one example) Or (B) A cookie is message given to a web browser by a web server. The browser store these messages in a text file, which keeps track of users activity like user name, passwords, browsing history etc. and facilitates faster access of web page. Generally cookies do not act as malicious function, but are major source of threat to privacy because by accessing cookies, the private and confidential information can be theft and misused. Or Any other Correct Definition (1 mark for Correct Cookie explanation)	2
26	SELECT Deptcode, MAX(Salary) FROM Employee Group by Deptcode; 2 marks for correct answer (Partial mark may be awarded)	2
27	1.Recycling/recovery of valuable material. 2.Dismantling 3.Refurbishment and reuse 4.Disposal of dangerous materials and waste 1⁄2 mark for each correct answer	2
28	(A) 2 8 4 7 1⁄2 mark for each correct value of output (1⁄2 x 4 = 2 marks) **OR** (B)	2

	i) import pandas as pd [1 mark] ii) 3 columns [1 mark]	
	Section - C (4x3 = 12 marks)	
29	(i) No (ii) Phishing (iii) He should inform about it to cyber expert and cyber cell and also not to click on the link. 1 mark for each correct answer	3
30	(A) import pandas as pd data=[[101,'Gurman',98],[102,'Rajveer',95],[103,'Samar' ,96], [104,'Yuvraj',88]] df=pd.DataFrame(data,columns=['Rno','Name', 'Marks']) 1 mark for each correct python statement OR (B) import pandas as pd D={101:"Harsh",102:"Arun",103:"Ankur",104:"Harpahul",105:"Divya", 106:"Jeet" } s=pd.Series(D) print(s) 1 mark for each correct python statement	3
31	i) create database startup; ii) CREATE TABLE SHOP(Fno INT(5) PRIMARY KEY, Fname VARCHAR(25),Type CHAR(10),Stock INT(3), Price DECIMAL(8,2));	3

32	A)
	i) SELECT CITY, COUNT(*) FROM STUDENTS GROUP BY CITY;
	(½ mark for writing SELECT CITY, COUNT(*)FROM STUDENTS)
	(½ mark for writing GROUP BY CITY)
	
	ii) SELECT AVG(AGE) FROM STUDENTS;
	(½ mark for writing SELECT AVG(AGE))
	(½ mark for writing FROM STUDENTS)
	
	iii) SELECT NAME, GRADE FROM STUDENTS S, GRADES G
	WHERE S.S_ID = G.S_ID ;
	OR
	SELECT NAME, GRADE FROM STUDENTS, GRADES
	WHERE STUDENTS.S_ID = GRADES.S_ID ;
		3

	OR SELECT NAME, GRADE FROM STUDENTS NATURAL JOIN GRADES ; (½ mark for writing SELECT NAME, GRADE FROM STUDENTS, GRADES) (½ mark for writing correct part to join the tables) **OR** B) i) DELETE FROM SALES WHERE UnitsSold < 80; (½ mark for writing DELETE FROM SALES) (½ mark for writing WHERE UnitsSold < 80) ii) SELECT PName FROM PRODUCTS WHERE Category IS NULL; (½ mark for writing SELECT PName FROM PRODUCTS) (½ mark for writing WHERE Category IS NULL) iii) SELECT PName, UnitsSold FROM PRODUCTS P, SALES S WHERE P.PID = S.P_ID ; OR SELECT PName, UnitsSold FROM PRODUCTS, SALES WHERE PRODUCTS.PID = SALES.PID ; OR SELECT PName, UnitsSold FROM PRODUCTS NATURAL JOIN SALES; (½ mark for writing SELECT PName, UnitsSold) (½ mark for writing correct part to join the tables)	
	Section - D (2x4 = 8 marks)	
33	i) import matplotlib.pyplot as plt ii) plt.plot(Year, Strength) iii) plt.title("Year Wise Students Strength in Class XII") iv) plt.savefig("stud.png") (1 mark for each correct answer)	4

34	i)select upper(cust_name) from customer order by age desc;
	(½ mark for SELECT and Upper part)
	(½ mark for WHERE and Order by clause)
	ii)SELECT city, min(age)FROM Customer GROUP BY city;
	(½ mark for SELECT and MIN()part)
	(½ mark for GROUP BY clause)
	iii)select right(email,3) from customer;
	(1 mark for use of right() correctly)
	iv) UPDATE Customer SET phone = 8995715156 WHERE cust_name = 'Trisha';
	(½ mark for UPDATE and SET part)
		4

(½ mark for WHERE clause)

OR

B)

i)

MAX(Qtysold)	MIN(Qtysold)
120	68

ii)

Count(Area)
5

iii)

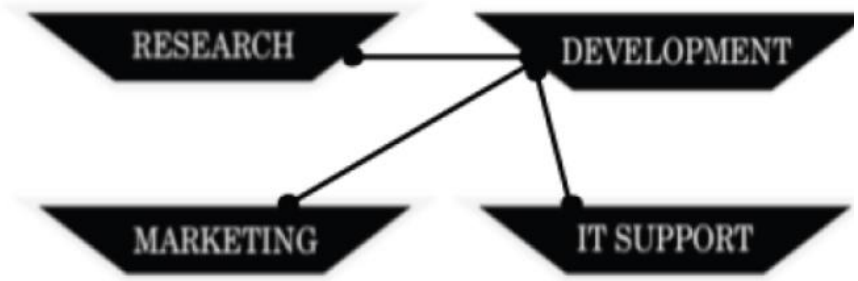
LENGTH (Sname)
4
5

iv)

Sname
Ankit

Section - E (3x5 = 15 marks)

35 i)Topology : Star Topology 5



(½ mark for correct topology)
(½ mark for correct cable layout)

ii) Suggested Network Type : LAN
Justification :
Research and Development departments are within the same campus with a distance of 60 m only.
(½ mark for correct Network Type)
(½ mark for correct Justification)

iii) Suggested Department : Development

	Reason : Development department has the highest number of computers (120), making it a choice for server placement to handle the load efficiently. (½ mark for correct Department) (½ mark for correct Reason) iv)Switch/Hub should be placed in all departments as all divisions have more than 1 computer. (½ mark for correct placement) (½ mark for correct Justification) v)Voice over Internet Protocol (1 mark for correct full form)	
36	a) Book[‘Special_Price’]= [135,150,200,440] b) Book.loc[4]=[‘The Secret' ,800] c) Book.drop(‘Special_Price’, axis=1, inplace=True) d) Book.rename({‘Price’: ‘BookPrice’}) e) Book.loc[3]=[‘ Harry Potter ' ,850] (1 mark for each correct answer)	5
37	(a) SELECT SUBSTRING('EK BHARAT SHRESHTHA BHARAT', 3, 5); (b) SELECT INSTR('INDIA IS THE GREATEST COUNTRY', 'GREATEST'); (c) SELECT ROUND(453.668, 2); (d) SELECT COUNT(*) FROM Employee; (e) SELECT SUM(Salary) FROM Employee; (1 mark for each correct query) OR (a) SELECT SUBSTR('INFORMATICS PRACTICES', 4, 5); (b) SELECT INSTR('HUMPTY DUMPTY SAT ON A WALL', 'DUMPTY'); (c) SELECT ROUND(45.1876, 1); (d) SELECT MOD(77, 4); (e) SELECT TRIM(student_name) FROM result; (1 mark for each correct query)	5