1ST PRE-BOARD EXAMINATION 2024-25

CLASS: XII   SUBJECT: INFORMATICS PRACTICES

Answer Key/Marking Scheme

Q No	Section-A (21x1 = 21 marks)	Marks
1	c. 1 Dimensional (1 mark for correct answer)	1
2	(B). Filter rows based on a specific condition (1 mark for correct answer)	1
3	(D). Router (1 mark for correct answer)	1
4	a)Now() (1 mark for correct answer)	1
5	(D). Electronic devices that are no longer in use (1 mark for correct answer)	1
6	import pandas as pd df=pd.DataFrame() print(df) (1 mark for correct answer)	1
7	b) savefig (1 mark for correct answer)	1
8	True (1 mark for correct answer)	1
9	(B). pd.read_csv('filename.csv') (1 mark for correct answer)	1

10	(A) Using copyrighted material without giving proper acknowledgement to the source (1 mark for correct answer)	1
11	(D). Rows (1 mark for correct answer)	1
12	(iii) Tree topology cannot be implemented when bus and star topology are not implemented individually (1 mark for correct answer)	1
13	(c) Library (1 mark for correct answer)	1
14	(iv) Intellectual Property Rights (1 mark for correct answer)	1
15	d. Error (1 mark for correct answer)	1
16	(iv) 99.024 (1 mark for correct answer)	1
17	(ii) df.shape (1 mark for correct answer)	1
18	(C). Line plot (1 mark for correct answer)	1
19	c) Determine the best path for data packets (1 mark for correct answer)	1
20	b) Dictionary's keys (1 mark for correct answer)	1
21	(i) SELECT MONTH("1993-10-09"); (1 mark for correct answer)	1

	Section - B (7x2 = 14 marks)	
22	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 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	Software Licencing is the legal right given to us by a company for using or accessing their application whereas copyright is a legal mechanism establishing a sort of ownership of intellectual property. Advantages of licensed software: It ensures legal use, prevents copyright infringement and encourages user contributions. (1 mark for each correct definition) (1/2 mark each for correct advantage of each)	2
24	Order by: clause is used to sort data in ascending or descending order based on one or more column. Group by: clause can be used in a SELECT statement to collect data across multiple records and group the result by one or more columns (1 mark for each correct deference)	2
25	The Internet is a vast network of interconnected computer networks facilitating global communication and data exchange. The World Wide Web (WWW), on the other hand, is a system of interlinked hypertext documents accessed via the Internet. (1 mark for correct definition)	2

	(1 mark for correct difference)	
	OR	
	Browser cookies: Small pieces of data stored on our digital devices by websites to remember information and personalize our experience. Advantage: Improve user experience by remembering preferences, like our preferred language and other settings.	
	(1 mark for correct definition)	
	(1 mark for correct advantage)	
26	**Primary Key**: A set of attributes that can uniquely identify each row in a table (relation). It must contain unique values and cannot be null. **How it differs from Candidate Key** There can be multiple Candidate Keys in a table (relation), but only one of them is selected as Primary Key. (1 mark for correct definition) (1 mark for correct difference)	2
27	Phishing is when someone tries to trick you online by pretending to be someone or something you trust, like a friend, a company, or a website. They send you messages, emails, or links that look real, but they're actually trying to get your personal information, like passwords or credit card numbers, so they can do bad things with it. So, it's important to be really careful and not share your important stuff with anyone you don't know or trust online.	2
28	d={'Name':['Nancy Drew','Hardy boys','Diary of a wimpy kid','Harry Potter] 'Price':[150,180,225,500]} stock =pd.DataFrame(d) print(stock) (1 mark for correct import statement) (1 mark for correct creation of DataFrame) OR import pandas as pd F={'Table' :40, 'Sofa' :2, 'Chair' :45, 'Stool' :26} F1=pd.Series(St) (1 mark for correct import statement) (1 mark for correct creation of Series)	2

	Section - C (4x3 = 12 marks)	
29	I. E-waste can release harmful substances like lead and mercury into the environment. (1 mark for correct answer) II. They can donate or sell it to a certified e-waste recycling center. (1 mark for correct answer) III. Recycling e-waste helps conserve natural resources and reduces pollution. (1 mark for correct answer)	3
30	(i) df.rename(columns={"Name":"Local_Name"},inplace = True) (ii) df["Numbers"]=[10, 100, 100, 30] (iii) df.pop("Height(m)") (1 mark for each correct answer) OR Line1: import pandas as pd Line2: import_numpy as np # Library name Line3: A=np.array([2,11,2]) # function name to get numpy array Line 4: S=pd.Series(_A_____, index=[_0,1,2]) # Data name and indexes Line 5: print(S) (for correct fill in Line2, Line3 and Line4 1 mark each)	3

31	(i) CREATE DATABASE CHOCOLATIERS;
	
	(1 mark for correct answer)
	
	(ii) CREATE TABLE CHOCOLATE_BOX
	      (BOX_ID VARCHAR(10) PRIMARY KEY,
	      BOX_COLOUR VARCHAR(15),
	      COST INTEGER);
	      INSERT INTO CHOCOLATE_BOX
	      VALUES("H123" , "RED", 42);
	
	(1 mark table creation)
	
	(1 mark for data insertion)
		3

32	(i) SELECT COURSE FROM UNIVERSITY_OF_MELBOURNE WHERE DURATION < 2; (ii) SELECT * FROM UNIVERSITY_OF_MELBOURNE ORDER BY FEES ASC; (iii) SELECT COURSE, EXAMS_ACCEPTED FROM UNIVERSITY_OF	3

_MELBOURNE WHERE FEES BETWEEN 20 AND 25 AND NUMBER_OF_SCHOLARSHIPS!= 0;

(1 mark for each correct answer)

OR

i) | LEFT(COURSE,8) |
| Computer |
| Industri |

ii) | MINIMUM FEES |
| 25.28 |

iii) | COUNT(COURSE) | EXAMS_ACCEPTED |
| 2 | TOEFL |
| 3 | IELTS |

(1 mark for each correct answer)

Section - D (2x4 = 8 marks)	

| 33 | I. matplotlib.pyplot
II. books_read
III. ylabel
IV. Number of Books Read by Students

(1 mark for each correct answer) | 4 |
| 34 | i. SELECT * FROM STUDENT ORDER BY ADMYEAR DESC;
ii. SELECT HOUSE, COUNT(HOUSE) FROM STUDENT GROUP BY HOUSE;
iii. SELECT CLASS, MAX(FEES) FROM STUDENT GROUP BY CLASS;
iv. LENGTH(SNAME | 4 |

4
5
5
5
5
4
5
5

(1 mark for each correct query)

	OR
	  i. SELECT MONTHNAME('2022-10-12');
	  ii. SELECT LOWER('abc@gmail.com');
	 iii. SELECT COUNT('ROMIL');
	 iv. SELECT LTRIM(' VANDE BHARAT ');
	
	(1 mark for each correct query)	

	Section - E (3x5 = 15 marks)	
35	(i) The most suitable place to install the server is EDP / IT block, as this block has the maximum number of computers. (ii) The ideal layout for connecting these blocks in a network is shown below: MERCHANDISING BLOCK ➔ FABRIC TESTING BLOCK ➔ EDP / IT BLOCK ➔ QUALITY CONTROL BLOCK (iii) Hub/Switch (iv) According to the above cable layout, no Repeater is required as the distance between blocks does not exceed 70 m. Repeaters are placed when the distance between two buildings or blocks is more than 70 metres. (v) Metropolitan Area Network (MAN) will be formed as its head office is 35 km away from Noida. (1 mark for each correct answer	5
36	I. print(df.head(2)) II. print(df['Title']) III. df = df.drop('Rating', axis=1) IV. print(df.loc[2:4,'Title']) V. df.rename(columns={'Title':'Name'}, inplace=True) (1 mark for each correct answer)	5

37	i. SELECT INSTR("WORKING HARD IS THE ONLY KEY TO SUCCESS, SHORTCUTS ARE FOR LOSERS", "SUCCESS");
	ii. SELECT UCASE ("WORKING HARD IS THE ONLY KEY TO SUCCESS, SHORTCUTS ARE FOR LOSERS");
	iii. 0.04
	iv. SELECT NOW ( );
	 v. 35
	
	 (1 mark for each correct query)
	
	     OR
	
	 i) SELECT ROUND(3.14159, 2);
		5

	ii) SELECT MOD(125, 8);
	iii) SELECT LENGTH('NewDelhi');
	iv) SELECT LEFT('Informatics Practices', 5);
	v) SELECT TRIM(email) FROM Students;
	
	(1 mark for each correct query)	