COMMON PRE-BOARD EXAMINATION 2022-23

Subject: INFORMATICS PRACTICES (065)

Date:

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 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 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

Section- A		
01	Data which has no restriction of usage and is freely available to everyone under Intellectual Property Rights is categorized as: (a) Open source (b) Open data (c) Open content (d) Open education	1
02	The best type of graph to represent distribution of elements is_____ (a) bar (b) histogram (c) pie (d) All of these	1
03	To display last Seven rows of a series object 'S', you may write: (a) S.head() (b) S.Tail(7) (c) S.Head(7) (d) S.tail(7)	1
04	What will be the output of the given query SELECT MOD(11,4); (a) 3 (b) 3.5	1

	(c) 2		
	(d) None of the above		
05	A website is a collection of		
	(a) Web links		
	(b) Webpages	1	
	(c) Webservers		
	(d) Hyperlinks		
06	The protocols used to send and receive emails, respectively, are		
	(a) SMTP, MIME		
	(b) SMTP, POP3	1	
	(c) POP3, SMTP		
	(d) POP3, MIME		
07	Which of the following SQL commands may output 29?		
	(a) select day(now());		
	(b)select now();	1	
	(c) select dayname(now());		
	(d) select month(now());		
08	Which of the following is an advantage of open source software:		
	(a) You can edit the source code to customize it		
	(b) You need to be an expert to edit code	1	
	(c) You have to pay		
	(d) You sometimes can be too generic for specialist purposes		
09	Data visualization helps to		
	(a) Understand data easily		
	(b) Take a decisions	1	
	(c) Improve the past performance		
	(d) All of these		
10	To display the 3rd , 4th, 5th and 6th columns from the 4th to 9th rows of a dataframe you can write		
	(a) DF.loc[6:9, 3:5]		
	(b) DF.loc[6:10, 3:6]	1	
	(c) DF.iloc[4:10, 3:7]		
	(d) DF.iloc[6:9, 3:5]		
11	Identify the incorrect statement.		
	(a) DataFrame is a two dimensional		
	(b) DataSeries can be created with List	1	
	(c) import pandas as PD (PD must be in capital letter)		
	(d) None of these		
12	Which of the following can be used to specify data for creating a DataFrame?		
	(a) Series		
	(b) DataFrame	1	
	(c) Structured ndarray		
	(d) All of these		

13	What will be the output for the following code? S = pd. Series([10,20,30,40,50],index = ['i', 'ii', 'iii', 'iv', 'v']) print (S['iii']) (a) 10 (b) 20 (c) 30 (d) 40	1
14	Which of the following is not a valid plotting function of pyplot? (a) plot( ) (b) bar( ) (c) line( ) (d) None of these	1
15	The correct statement to read from a CSV file in a DataFrame is : (a) <DF>.read_csv(<File>) (b) <file>. read_csv( )(<DF>) (c) <DF>=pandas.read(<file>) (d) <DF>= pandas.read_csv(<File>)	1
16	To create an empty series object you can use: import pandas as pd (a) pd.Series(empty) (b) pd.Series(np.NaN) (c) pd.Series() (d) All of these	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
17	**Assertion (A):** - Digital footprint is the trail of data we leave behind when we visit any website (or use any online application or portal) to fill-in data or perform any transaction. **Reasoning (R):-** While online, all of us need to be aware of how to conduct ourselves, how best to relate with others and what ethics, morals and values to maintain.	1
18	**Assertion (A):** To display the first four elements of a Series object, you may write S[:4]. **Reason (R):** To display the first five rows of a Series object S, you may use tail() function.	1
Section- B
19	Explain the terms Repeater and Gateway	2

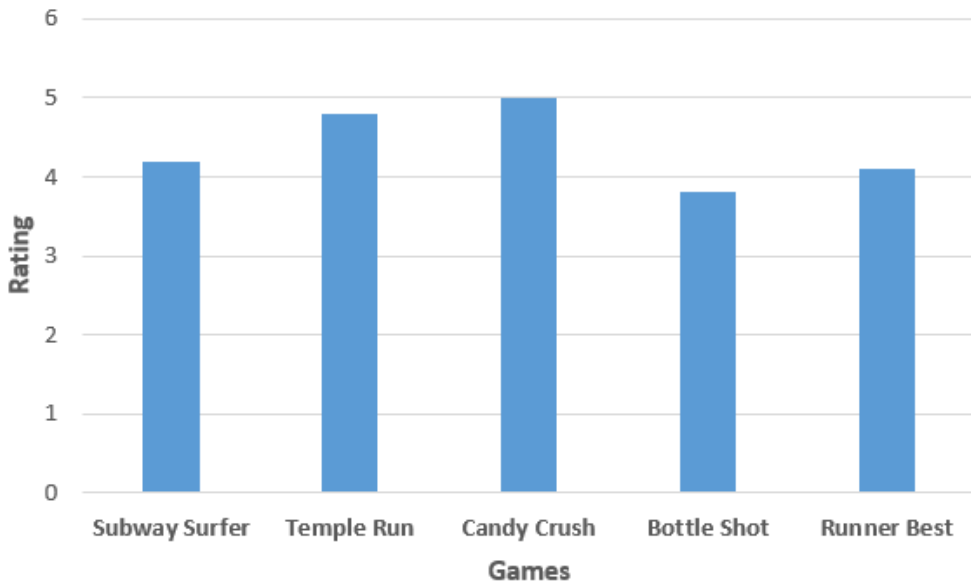|		
	OR Write the difference between MAN and WAN	
20	Consider the following two series objects S1 and S2 S1: A 20, B 100 S2: 0 200, 1 10 What will be the output of S1+S2	2
21	The following table shows the python code and its expected output. Choose the correct statement for blank space in line 1 and 3 for printing the correct output <table><tr><td>**Python code**</td><td>**Output**</td></tr><tr><td>1 import _____ 2 x = [10, 20 30] 3 ser = pd.Series(x, _____=["r1", "r2", "r3"]) 4 print(ser)</td><td>r1 10 r2 20 r3 30</td></tr></table>	2
22	Differentiate between order by and group by clause with example	2

23	What do you understand by Net Etiquettes? Explain any two such etiquettes.
	 OR Riya got a SMS from her bank querying her recent back transaction and to send her PIN number by SMS. Help her to answer the questions
	    (i) Should she has to SMS her pin number to the given contact number?
	    (ii) Should she has to call the bank to check the validity of the SMS received?
		2
		
		1 +1

24	Consider the given table and write the queries: Table: Students <table><tr><td>Name</td><td>Class/Section</td><td>Stream</td></tr><tr><td>Akash</td><td>12 A</td><td>Science</td></tr><tr><td>Monish</td><td>12 D</td><td>Commerce</td></tr><tr><td>Rahul</td><td>12 A</td><td>Science</td></tr><tr><td>Nandana</td><td>12 E</td><td>Commerce</td></tr><tr><td>James</td><td>12 A</td><td>Science</td></tr></table> (a) Find the number of students in Science stream (b) Display the records in ascending order by name wise	2
25	Create a Series object with first five odd numbers as data and index as ['a', 'b', 'c', 'd', 'e']	2

	Section- C	
26	A Salesman relation is given below:	

Scode	Sname	Address	DOJ	Sales	Area
100	Amit	Delhi	2017-09-29	5000.90	East
101	Sushant	Gurgaon	2018-01-01	7000.75	East
102	Priya	Noida	2018-04-25	3450.45	West
103	Mohit	Delhi	2018-04-25	6000.50	North
104	Priyanshi	Delhi	2019-12-15	8000.62	North

(a) Write SQL command to display the area-wise count of salesmen for those areas who have more than 1 salesman.

(b) Write SQL command to find the total Sales.

(c) Write SQL command to display the Sname and DOJ of the salesman who has joined most recently.

3

27	Suppose a data frame contains information about student having columns	

RollNo	Name	Class	Section
1	Atul	II	A
2	Nilesh	III	B

(a) Write the code for adding one more column as fee, take DF as Dataframe

(b) Write the code to transpose data frame.

(c) Write the code to delete column fee of data frame

3

| 28 | Describe the following:

    (i)   Digital Footprints

    (ii)   Phishing

    (iii)   Digital Signature

OR

Write the differences between the following —

a) Copyrights and Patents

b) Plagiarism and Copyright infringement

c) Non-ethical hacking and Ethical hacking | **3** |

| 29 | Explain what following statements will do

(a) df.iloc[:2,]

(b) df.iloc[3,1]

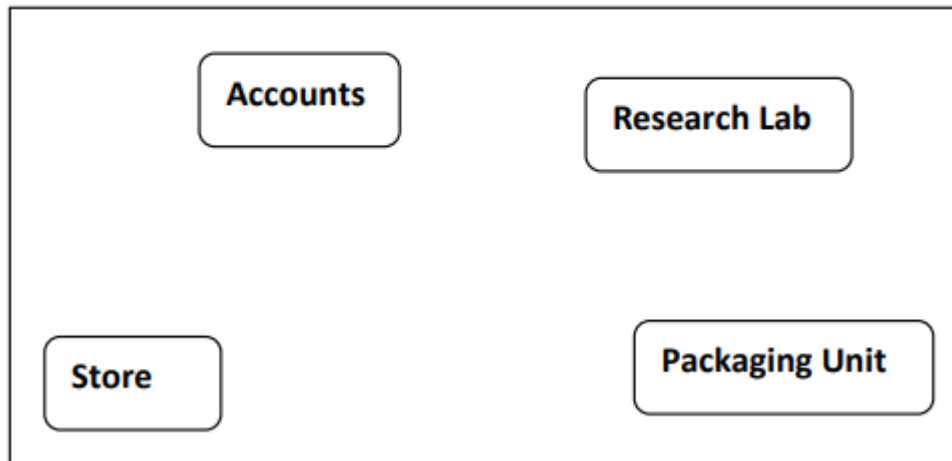(c) df.iloc[2:5,3:] | **3** |

30	Write the full forms of the following acronyms _____ (a) SMTP (b) FOSS (c) HTTP	3

Section D

31	Mr. Midhul is working in a game software development industry and he was comparing the given chart on the basis of the rating of the various games available on the play store.
	
	 He is trying to write a code to plot the graph. Help him to fill in the blanks of the code and get the desired output.
	
	 import_____ #Statement 1
	 Games=["Subway Surfer","Temple Run","Candy Crush","Bottle Shot","Runner Best"] Rating=[4.2,4.8,5.0,3.8,4.1] plt._____(Games,Rating) #Statement 2
	 plt.xlabel("Games") plt._____("Rating") #Statement 3
	 plt._____ #Statement 4
	 In case Mr. Midhuk wants to change the above plot to the any other shape, which statement, should he change?
		5

32	'METRO MEDICAL AND RESEARCH CENTER' of PURULIA has set up its new center in KOLKATA. It has four buildings as shown in the diagram given below	

Distance between various buildings is as follows:

Accounts to Research Lab	55m
Accounts to Store	150m
Store to Packaging Unit	160m
Packaging Unit to Research Lab	60m
Accounts to Packaging Unit	125m
Store to Research Lab	180m

Number of Computers:

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries

   (a) Suggest a cable layout of connections between the buildings

   (b) Suggest the most suitable place to house the sever of this organization.

   (c) Suggest the placement of the following device with justification

      (i)   Repeater (ii) hub/Switch

   (d) Suggest a system to prevent unauthorized access to or from the network.

33	Write the output of the given queries____ (a) SELECT LTRIM(' RDBMS MySQL'); (b) SELECT RIGHT('ÚSS/23/67/09',2); (c) SELECT DAYNAME(NOW()); (d) SELECT ROUND(1585.193,-2); (e) Differentiate between curdate() and now() in MySQL	5

Section E

34	**TABLE NAME-STUDENT**	4

S_ID	NAME	MARKS	CLASS	DOB
S001	James	450	X	2006-10-10
S002	Rahul	475	XII	2005-05-25
S003	Nandana	485	XII	2006-06-31
S004	Haider	455	X	2008-01-10
S005	Abhilash	465	XII	2005-02-21
S006	Fathima	470	X	2005-05-25
S007	Mayank	445	XI	2006-06-31
S008	Reetha	455	X	2008-04-28
S009	Shagun	460	XI	2007-03-20
S010	Palak	480	XII	2007-11-04

(a) Display the students name and birth -Month from the table.

(b) Display the details of youngest students from the table.

(c) Display the class wise average marks from the table.

(d) Display the count of various classes of the table

35	A dictionay dic contains {'Ename':['Mohit','Joysree','Kabir'], 'ESal':[35000,42000,33000],'gender':['M','F','M']} and a list Eno = [101,102,10,3] (a) Write Python code that create DataFrame where Ename, Esal and gender are columns and Eno is index. (b) Write Python code to print maximum Salary (c) Save the file as CSV in C:/USER/IP (file name must be emp) **OR (option for C only)** (c) Write the python code to find the sum of the values of ESal column	1+1+1