

INDIAN SCHOOL AL WADI AL KABIR

COMMON PRE BOARD EXAMINATION

INFORMATICS PRACTICES (065)

CLASS : XII

Date : 14/03/2024

Time Allowed: 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		
1)	Which of the following topologies contains a backbone cable running through the whole length of the network? a.Star b.Bus c. Ring d. Mesh	1
2)	Some of the electronic devices contain _____ which causes respiratory disorders and brain damage. a.Copper b. Beryllium c. Mercury d. Calcium	1
3)	A contract between the creator and the user use his/her work with some price is a. Agreement b. Copyright c. License d. Patent	1
4)	Predict the output select left("godbless",instr("you","u")); a.godbless b. bles c. less d. god	1
5)	The Having clause does which of the following? a. Acts Exactly like a Where clause b. Acts like a Where clause but is used for columns rather than groups c. Acts like a where clause but is used for groups rather than rows d. Acts like a where clause but is used for rows rather than columns	1
6)	_____operating system comes under FOSS a. Windows b.iOS c.Unix d.Chrome OS	1
7)	Which among the following is a scalar function? a. ROUND() b. SUM() c. COUNT() d. AVG()	1
8)	ISP stands for _____ a. Internet system process b. Interconnection services process c. Internet Service Provider d. Internet Service Processor	1

9)	The output of the following command select round(49.88); a. 49.9 b. 50.00 c. 50 d. 50.0	1
10)	Which function is used to create horizontal bar graph a. barh() b. hbar() c. plot(kind=hbar) d. plot(barh)	1
11)	Akash have written the following code to display a column marks in dataframe df as print(df['marks']) Incase if the column marks doesn't exist, what type of error he may get. a. Index Error b. Key Error c. Logic error d. Syntax Error	1
12)	To find out if symbol @ is present in the values of email id column or not, which function out of the following should be used? a.Substr() b.Instr() c.Mid() d.length()	1
13)	Which of the following will display the number of elements in a dataframe df ? a. df.values b. df.size c. df.count d. df.shape	1
14)	Which SQL statement do we use to find out the total number of records present in the table SALES? (a) SELECT * FROM SALES; (b) SELECT COUNT (*) FROM SALES; (c) SELECT LENGTH () FROM SALES; (d) SELECT SUM (*) FROM SALES;	1
15)	Rajesh received an email warning him of closure of his bank accounts if he did not update his banking information as soon as possible. He clicked the link in the email and entered his banking information. Later he got to know that he was duped. This is an example of _____. a. Online Fraud b. Identity Theft c. Plagiarism d. Phishing	1
16)	Google Translate is _____ a. Add-on b. Browser c. plug-ins d. Search Engine	1
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. Reason(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. i. Both A and R are true and R is the correct explanation for A ii. Both A and R are true and R is not the correct explanation for A iii. A is True but R is False iv. A is false but R is True	1
18)	Assertion (A): - Pandas Series is a single dimensional and each value have index. Reasoning (R):- The values are mutable but the index values are immutable. i. Both A and R are true and R is the correct explanation for A ii. Both A and R are true and R is not the correct explanation for A iii. A is True but R is False iv. A is false but R is True	1

Section-B											
19)	<p>Tanisha is preparing for a presentation on 'WWW and Internet.' As part of her research, she needs to understand the distinctions between these two concepts. Help her with writing down the differences.</p> <p style="text-align: center;">(OR)</p> <p>Swapna is trying to teach her friend about the Plug-ins help her to list out few point that could help her to comprehend it better .</p>	2									
20)	<p>The python code written below has logical errors and syntax error. Rewrite the correct code and underline the corrections made.</p> <pre> Import pandas as ps ps=pd.series({"Sour": "soup", "Dum": "Briyani", "Icy": "Juice", "Cold": "Coffee", index=["s", "D", "I", "C"]}) print(s.name='Food') print(s) </pre>	2									
21)	<p>Consider the following description of Table Food</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Column Name</th> <th>Data Type</th> <th>Constraints</th> </tr> </thead> <tbody> <tr> <td>Food_Item</td> <td>Varchar(20)</td> <td>Primary Key</td> </tr> <tr> <td>Calorie</td> <td>Integer</td> <td></td> </tr> </tbody> </table> <p>Write the queries for the following</p> <p>i) Display the number of characters in the Food_item.</p> <p>ii) Delete the values in the calorie column which are less than 25.</p>	Column Name	Data Type	Constraints	Food_Item	Varchar(20)	Primary Key	Calorie	Integer		2
Column Name	Data Type	Constraints									
Food_Item	Varchar(20)	Primary Key									
Calorie	Integer										
22)	<p>Carefully observe the following code:</p> <pre> import pandas as pd data = [{'a': 10, 'b': 20}, {'a': 6, 'b': 32, 'c': 22}] df1 = pd.DataFrame(data) print(df1) </pre> <p>Answer the following:</p> <p>i. List the index of the DataFrame df1</p> <p>ii. List the column names of DataFrame df1.</p>	2									
23)	<p>Ravi is studying about the URL help him in identifying the parts of URL and explain them from the URL given below.</p> <p style="text-align: center;">https://ncert.nic.in/textbook.php.</p>	2									

24)	<p>Consider the following Series S1</p> <p>IP 95 Phy 89 Chem 90 Mat 100</p> <p>i. Write the code to create the Series and name the series as Marks. ii. Write the code to print the values in the series which are greater than 90.</p>	2																																																	
25)	<p>Anjali needs to arrange the records from largest to smallest, but she doesn't know what she should use in her query. Help her understand the difference between GROUP BY and ORDER BY. Also, suggest what she should use in her scenario.</p>	2																																																	
Section-C																																																			
26)	<p>Write SQL queries (i) to (iii) which are based on the given table loan:</p> <table border="1" data-bbox="272 737 1112 997"> <thead> <tr> <th>Accno</th> <th>Custname</th> <th>Loanamt</th> <th>Instalment</th> <th>Intrate</th> <th>startdate</th> <th>Interest</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Akash singh</td> <td>245000</td> <td>24</td> <td>10.00</td> <td>01-01-2023</td> <td>1000</td> </tr> <tr> <td>2</td> <td>Vivek sahu</td> <td>300000</td> <td>30</td> <td>12</td> <td>10-02-2023</td> <td>1200</td> </tr> <tr> <td>3</td> <td>Pushkar Agrawal</td> <td>600000</td> <td>36</td> <td>NULL</td> <td>08-03-2023</td> <td>1600</td> </tr> <tr> <td>4</td> <td>Kanak ojha</td> <td>450000</td> <td>60</td> <td>12.50</td> <td>06-09-2022</td> <td>1400</td> </tr> <tr> <td>5</td> <td>Praveen sharma</td> <td>700000</td> <td>48</td> <td>12.50</td> <td>07-10-2022</td> <td>1500</td> </tr> <tr> <td>6</td> <td>Sudhakar rao</td> <td>500000</td> <td>36</td> <td>12</td> <td>09-11-2022</td> <td>1800</td> </tr> </tbody> </table> <p>i) Display the interest rate wise sum of all loan amounts having interest rate more than 10. ii) Display the details of loans started in the month of March. iii) Display the sum of installments for interest rate wise loan holders.</p> <p style="text-align: center;">(OR)</p> <p>Predict the output of the following queries based on the table Loan given above:</p> <p>a) select interest+100 from loan where interest between 1200 and 1600; b) select mid(custname,2,3), round(intrate) from loan; c) select count(intrate) from loan group by Intrate;</p>	Accno	Custname	Loanamt	Instalment	Intrate	startdate	Interest	1	Akash singh	245000	24	10.00	01-01-2023	1000	2	Vivek sahu	300000	30	12	10-02-2023	1200	3	Pushkar Agrawal	600000	36	NULL	08-03-2023	1600	4	Kanak ojha	450000	60	12.50	06-09-2022	1400	5	Praveen sharma	700000	48	12.50	07-10-2022	1500	6	Sudhakar rao	500000	36	12	09-11-2022	1800	3
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27)	<p>Create a DataFrame 'cricket' from the given Nested list: [["Rohit", 'Batter', 36], ['Virat', 'Batter', 35], ["Jasprit", 'Bowler', 29], ["Ravidra", "All-Rounder", 34]] Also give appropriate column headings.</p>	3																																																	

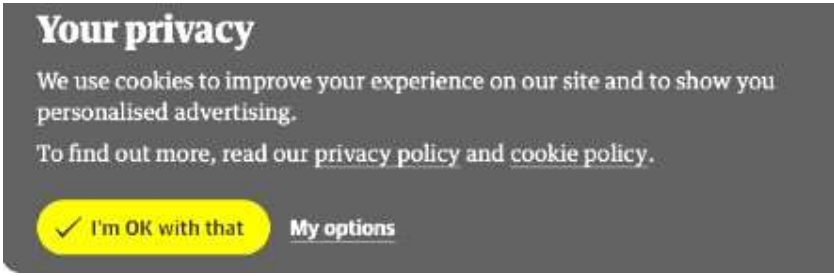
28) Sayuj is working with two tables help him in writing SQL queries for the following 3

Co.ID	Co.Name	Co. City
18	Order All	Boston
15	Jack Hill LTD	London
16	Akas Foods	Delhi
17	Foodies	London
19	sip-and-Bite	New York

I.ID	ITEM_NAME	I. UNIT	Co. ID
1	Chex Mix	Pcs	16
6	Cheez-it	Pcs	15
2	BN Biscuit	Pcs	15
3	Mighty Munch	Pcs	17
4	Pot Rice	Pcs	15
5	Jaffa Cakes	Pcs	18
7	Salt n Shake	Pcs	-

- i) Display the company name, item name and company city in the descending order of company name
- ii) Display itemname and units of items from London.
- iii) Display the different cities.

29) Geethanjali is using chrome browser and she visited a Websites as a part of her research she got a pop-up message which is given below .Help her to handle the message also she doesn't know what is cookies and what are the uses of it 3



(OR)

Mr. Munish is planning to gift his son a laptop, but he is worried about the health issues that his son may face. Help him to note down important points to be discussed regarding precautions and health-related issues with his son.

30) Consider the DataFrame “sdf” 3

	Name	Sub1	Sub2	Sub3	Sub4	Sub5
0	Arun	58	64	74	69	80
1	Anuj	82	84	91	88	79
2	Anshu	78	69	84	76	84
3	Amit	44	49	39	34	55
4	Astha	66	69	58	77	69

- Write suitable Python statements for the following:
- i. Add a column the total marks which contains values by adding all the 5 subjects.
 - ii. Change the name Anshu to Arshul.
 - iii. Display the name and Sub2 who have score is above 80.

Section-D																														
31)	<p>Saniya is assigned to perform a new task in the company as a store keeper so every</p> <p>4 day her task is to maintain the stocks in the Database. The stock table has columns as Item_ID, Item_name, Qty, Price, PoDate</p> <p>For each scenario, provide the SQL statements to perform the necessary action.</p> <p>i) She needs to find the recent purchase Date ii) Due to market inflation the price of all the items must be have increased by 25 iii) As She couldn't find an item based on purchased date so she needs to delete the item which has no PoDate iv) she needs to check the availability of Vacuum cleaner which was purchased on November</p>	4																												
32)	<p>Mr.Samson a data analyst has designed the DataFrame “dft” that contains data about product and brand. Answer the following questions:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>PNAME</th> <th>BRAND</th> <th>PRICE</th> </tr> </thead> <tbody> <tr> <td>S101</td> <td>FACE WASH</td> <td>DOVE</td> <td>150</td> </tr> <tr> <td>S102</td> <td>SOAP</td> <td>LUX</td> <td>53</td> </tr> <tr> <td>S103</td> <td>AIR FRESHER</td> <td>AIRWICK</td> <td>98</td> </tr> <tr> <td>S104</td> <td>HAND WASH</td> <td>DETOL</td> <td>70</td> </tr> <tr> <td>S105</td> <td>TOOTH PASTE</td> <td>HIMALAYA</td> <td>65</td> </tr> <tr> <td>S106</td> <td>BODY WASH</td> <td>BATH&BODY</td> <td>230</td> </tr> </tbody> </table> <p>i. Predict the output of the following python statement: A. print(dft [2:4]) B. print(dft.loc['S102':'S103', ['PNAME', 'PRICE']])</p> <p>ii. Include a new product shampoo with BRAND as Pantene having price 135. iii. Write a statement to rename the column Brand to Make (Or) (Option for part iii only) iii. To display the first 3 rows along with PNAME and BRAND column.</p>		PNAME	BRAND	PRICE	S101	FACE WASH	DOVE	150	S102	SOAP	LUX	53	S103	AIR FRESHER	AIRWICK	98	S104	HAND WASH	DETOL	70	S105	TOOTH PASTE	HIMALAYA	65	S106	BODY WASH	BATH&BODY	230	4
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SECTION –E																														
33)	<p>Write the SQL queries which will perform the following operations:</p> <p>5</p> <p>i. Display the word “hello” from the string “\$\$\$\$\$\$\$_hello\$\$\$\$\$\$\$”.</p> <p>ii. To display day from your date of birth (i.e. Tuesday).</p> <p>iii. To display the count of male and female participants from the column gender and table “Act”.</p> <p>iv. To remove all the probable leading and trailing spaces from the column lname of the table user.</p> <p>v. To display the first three characters of the string in column Dept from the table Emp.</p> <p style="text-align: center;">(OR)</p>	5																												

Rishab have created the table for maintaining staff details

Table: staff

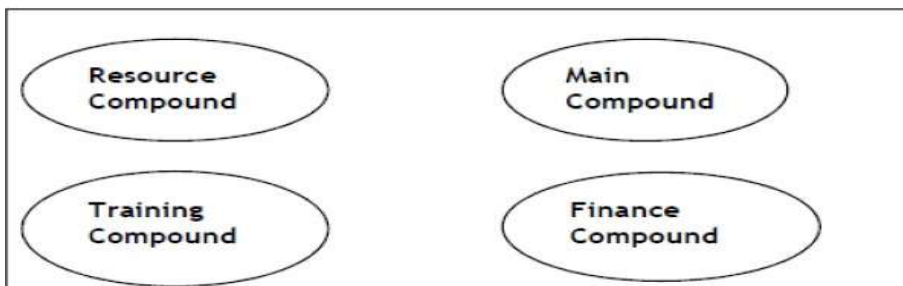
Staffno	Name	Department	Salary	DOB	Gender
1	Ram kumar	Computer	8200	1978-02-21	Male
2	Jai singh	Chemistry	7800	1990-07-14	Male
3	Savita lal	Biology	9000	1992-11-08	Female
4	Geeta verma	Biology	6900	2004-01-06	Female
5	Jyoti dua	Physics	6800	2003-10-28	Female

Write SQL queries to the perform the following task:

- Display the recent date of birth and the lowest salary of staffs.
- Display the count of unique department.
- Delete the details of Jai singh
- To display the average salary of Biology department.
- Display the department wise average salary where the average is less than 15000

34) “Learn Together” is an educational NGO. It is setting up its new campus at Jaipur for its web-based activities. The campus has 4 compounds as shown in the diagram below:

5



Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows :

Main Compound to Resource Compound	110 m
Main Compound to Training Compound	115 m
Main Compound to Finance Compound	35 m
Resource Compound to Training Compound	25 m
Resource Compound to Finance Compound	135 m
Training Compound to Finance Compound	100 m

Expected Number of Computers in each Compound is as follows:

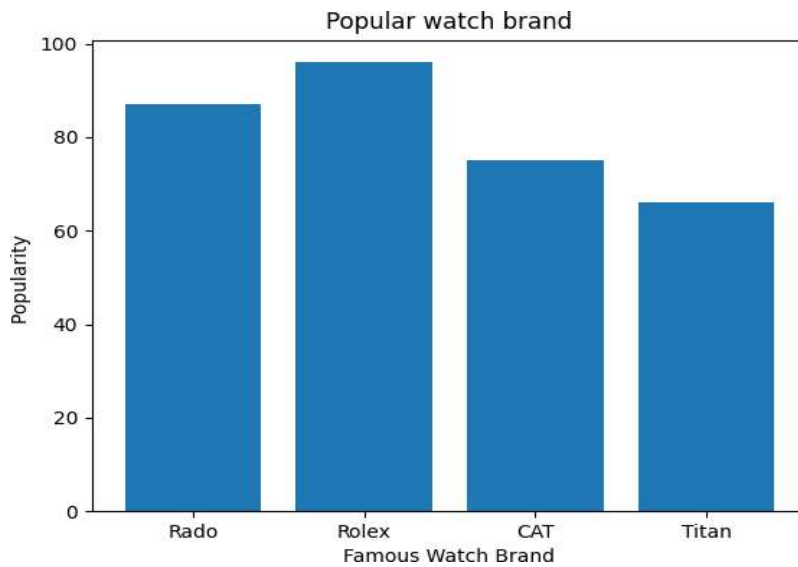
Main Compound	5
Resource Compound	15
Training Compound	150
Accounts Compound	20

1. Suggest a cable layout of connections between the compounds.
2. Suggest the most suitable place (i.e. compound) to house the server for this NGO. Also, provide a suitable reason for your suggestion.
3. Suggest the placement of the following devices with Justification:
 - (i) Repeater
 - (ii) Hub/Switch
4. Suggest best communication medium among the following to provide most efficient and fastest connectivity between the various wings. The company/trust is ready to compromise the cost for this network setup.
Co-axial cable, Ethernet Cable, Optical Fiber, Single pair Telephone Cable
5. What type of network is formed within the Jaipur office? Justify your answer.

35) Salim is taking a survey for plotting a Histogram which is based on Bike Touring and he have recorder number of days and Distance covered by bike riders
 days= [50,80,70,80,40,20,20,20,70,20,60,20,80,50,40,50,20,60,60,60]
 Give an appropriate chart title and both axis labels. Also give suitable python statement to save this chart in D drive in png format.

(OR)

Write suitable Python code to create Bar Chart as shown below:



Also write the python code to save the chart as “watch” at E drive in png format.