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| **FT/IPHQP/1223/A 17-JUN-2023** | | | | |
| **FIRST TERM EXAMINATION - (2023-24)** | | | | |
| **SUBJECT: INFORMATICS PRACTICES-H (PYTHON)**  **GRADE: XII** | | | MAX. MARKS: 70TIME: 3 Hrs | |
| *General Instructions:*  * *This question paper contains FIVE sections – A , B, C, D and E.* * *Section A has 18 MCQ questions of 1 mark each.* * *Section B has 7 questions of 2 marks each.* * *Section C has 5 questions of 3 marks each.* * *Section D has 3 questions of 5 marks each.* * *Section E had 2questions of 4 marks each.* * *All programming questions are to be answered using Python Language only.* * *Question paper contains 5 printed pages.* | | | | |
| **SECTION A** | | | | |
| 1. | **Which type of values will not be considered by SQL while executing the following statement?**  SELECT COUNT(column name) FROM inventory; | | | 1 |
|  | 1. Numeric value | 1. Text value | |  |
|  | 1. Null value | 1. Date value | |  |
| 2. | **If column “Fees” contains the data set (5000,8000,7500,5000,8000), what will be the output after the execution of the given query?**  **SELECT SUM (DISTINCT Fees) FROM student;** | | | 1 |
|  | 1. 20500 | 1. 10000 | |  |
|  | 1. 20000 | 1. 33500 | |  |
| 3. | Which SQL statement do we use to find out the total number of records present in the table ORDER? | | | 1 |
|  | 1. SELECT \* FROM ORDERS; | 1. SELECT COUNT(\*) FROM ORDERS; | |  |
|  | c) SELECT FIND(\*) FROM ORDERS; | d) SELECT SUM() FROM ORDERS; | |  |
| 4. | Which of the following statement will import pandas library? | | | 1 |
|  | 1. Import pandas as pd | 1. Import Pandas as py | |  |
|  | 1. import pandas as pd | 1. import panda as pd | |  |
| 5. | **To get the number of elements in the series object, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attribute is used.** | | | 1 |
|  | 1. index | 1. size | |  |
|  | 1. itemsize | 1. ndim | |  |
| 6. | **Missing data in pandas object is represented through:** | | | 1 |
|  | 1. Null | 1. None | |  |
|  | 1. Missing | 1. NaN | |  |
| 7. | To delete a column from a DataFrame, you may use \_\_\_\_\_\_\_\_\_\_\_\_\_\_ statement. | | | 1 |
|  | 1. remove | 1. del | |  |
|  | 1. drop | 1. cancel | |  |
| 8. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ will get the transpose of a dataframe D1. | | | 1 |
|  | 1. D1.T | 1. D1.Transpose | |  |
|  | 1. D1.Swap | 1. All of these | |  |
| 9. | Which of the following statement is used for adding a new column “Marks” to Dataframe DF? | | | 1 |
|  | 1. DF[“Marks”]=[23,24,32] | 1. DF\_Marks=[23,24,32] | |  |
|  | 1. DF.Marks=[23,24,32] | 1. DF.loc[“Marks”]=[23,24,32] | |  |
| 10. | Which operator is used to select values within a range? | | | 1 |
|  | 1. RANGE | 1. WITHIN | |  |
|  | 1. BETWEEN | 1. IN | |  |
| 11. | **The sql built in function \_\_\_\_\_\_\_\_\_\_\_\_\_\_ totals values in numeric columns** | | | 1 |
|  | 1. total( ) | 1. max( ) | |  |
|  | 1. add( ) | 1. sum( ) | |  |
| 12. | CSV stands for \_\_\_\_\_\_ | | | 1 |
| 13. | The NOT NULL constraint enforces a column to not accept empty values. | | | 1 |
|  | 1. TRUE | 1. FALSE | |  |
| 14. | Write a suitable Python code to create an empty dataframe. | | | 1 |
| 15. | What will be the output of the following program  import pandas as pd  s1=pd.Series(['1','2'])  s2=pd.Series(['11','22','33'])  print(s1+s2) | | | 1 |
| 16. | To delete a column from a dataframe D, the command is: | | | 1 |
|  | * 1. D.del(Column name) | * 1. del D(Column name) | |  |
|  | * 1. d.pop(Column name) | * 1. pop D(Column name) | |  |
| 17. | To access the third to fifth elements if a dataframe D the command is: | | | 1 |
|  | a) D[2:] | b) D[3:5] | |  |
|  | c) D[2:5] | d) D[2:6] | |  |
| 18. | Assertion (A): DataFrame has both a row and column index.  Reasoning (R): A DataFrame is a two dimensional labelled data structure like a table of MySQL.  Mark the correct choice as  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. | Rashmi, a database administrator needs to display house wise total number of records of  ‘Red’ and ‘Yellow’ house. She is encountering an error while executing the following query:  SELECT HOUSE, COUNT(\*) FROM STUDENT  GROUP BY HOUSE  WHERE HOUSE=’RED’ OR HOUSE= ‘YELLOW’  ;  Help her in identifying the reason of the error and write the correct query by suggesting the possible correction(s) | | | 2 |
| 20. | What is the difference between ORDER BY and GROUP BY clause when used alongwith the SELECT statement. | | | 2 |
| 21. | Write a program to create a series object using a dictionary that stores the number of students in each house of class 12D of your school.  Note: Assume four house names are Amazon, Nile, Danube and Indus having 18, 2, 20, 18 students respectively and pandas library has been imported as pd. | | | 2 |
| 22. | Carefully observe the following code:  import pandas as pd  Year1={‘Q1′:5000,’Q2′:8000,’Q3′:12000,’Q4’: 18000}  Year2={‘A’ :13000,’B’:14000,’C’:12000}  totSales={1:Year1,2:Year2}  df=pd.DataFrame(totSales)  print(df)  Answer the following:   1. List the index of the DataFrame df 2. List the column names of DataFrame df | | | 2 |
| 23. | What will be the output of the following program?  import pandas as pd  fst=[9,10,11]  scd=pd.Series(fst)  ob1=pd.Series(data =fst\*2)  ob2=pd.Series(data=scd\*2)  print(“ob1”)  print(ob1)  print(“ob2”)  print(ob2) | | | 2 |
| 24. | What will be the output of the Python program ?  import pandas as pd  I=['Apple','Banana','Mango','Orange','Litchi']  df=pd.DataFrame(I,index=[1,2,3,4,5])  print(df.iloc[1:3])  print(df1.iloc[3:]) | | | 2 |
| 25. | Write python code to write DataFrame data into “a.csv” file. | | | 2 |
| **SECTION C** | | | | |
| 26. | Given the two dataframe df1 and df2, write the commands to do the following:     1. To add the dataframe df1 and df2 2. To change the index of df2 from 0,1,2,3 to a,b,c,d 3. To display those rows in df1 where the value of the third column is more than 45 | | | 3 |
| 27. | Write a python program to create the above dataframe. | | | 3 |
| 28. | Write the SQL command to create a table named student having following structure | | | 3 |
| 29. | Observe the following tables, EMPLOYEES and DEPARTMENT carefully and answer the questions that follow :  Consider the following table- Employee Table: Employee   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | No | Name | Salary | Zone | Age | Grade | Dept | | 1 | Mukul | 30000 | West | 28 | A | 10 | | 2 | Kritika | 35000 | Centre | 30 | A | 10 | | 3 | Naveen | 32000 | West | 40 |  | 20 | | 4 | Uday | 38000 | North | 38 | C | 30 | | 5 | Nupur | 32000 | East | 26 |  | 20 | | 6 | Mokesh | 37000 | South | 28 | B | 10 | | 7 | Shelly | 36000 | North | 26 | A | 30 |   Based on this table write SQL statements for the following queries: -   * + 1. To display the total salary for all the employees who are from West zone.     2. To count no of employees without any grade.   iii.To display zone wise highest salary and lowest salary. | | | 3 |
| 30. | Table : TRANSPORTER  |  |  |  |  |  | | --- | --- | --- | --- | --- | | ORDERNO | DRIVERNAME | SALARY | ITEM | TRAVELDATE | | 10012 | RAM YADAV | 9876.99 | TELEVISION | 2019-04-19 | | 10014 | SOMNATH SINGH | 12345.50 | FURNITURE | 2020-01-12 | | 10016 | MOHAN VERMA | 15999.50 | WASHING MACHINE | 2019-06-06 | | 10018 | RISHI SINGH | 6575.99 | REFRIGERATOR | 2020-04-07 |   Rashmi has written following queries. Give the output of each query.  ( i) select sum(SALARY) from **TRANSPORTER** where YEAR(TRAVELDATE)=2019;   1. select max(SALARY)+min(SALARY) from **TRANSPORTER** where LENGTH(ITEM)>=10; 2. select avg(SALARY) from **TRANSPORTER** where RIGHT(DRIVERNAME,1)=’H’; | | | 3 |
| **SECTION D** | | | | |
| 31. | Write SQL queries for (a) to (c) and find outputs for SQL queries (d) and (e) which are based on the tables given below:     1. Display ANO and AMOUNT of all Deposit and Withdrawals done in the month of ‘May’ 2017 from table TRANSACT. 2. Display the first date of transaction (DOT ) of the account no(ANO) 102. 3. Display ANO,ANAME,AMOUNT AND DOT of those persons from ACCOUNT and TRANSACT table who have done transaction less than or equal to 3000. 4. SELECT ANO,NAME FROM ACCOUNT    1. WHERE ADDRESS NOT IN (‘CHENNAI’,’BANGALORE’); 5. SELECT DISTINCT ANO FROM TRANSACT; | | | 5 |
| 32. | Table: Employee     |  |  | | --- | --- | | FirstName | LastName | | Naveen | Gupta | | Ram | Sharma | | Mohan | Kumar | | Aayu | Chugh |     Considering the given table Employee, write SQL statements for the following:   1. Display records from the table persons where the value of FirstName is “Naveen” 2. Display records from the table persons where the value of LastName starts with “A” 3. Display all the records from the table persons sorted in the descending order of firstname. 4. Add a new record to the table persons. 5. Display records where the lastname is either ‘Gupta’ or ‘Sharma’ | | | 5 |
| 33. | Write the SQL queries which will perform the following operations   1. To display the year from your Date of Admission which is 2023-05-15. 2. To convert your email id ‘ABC@XYZ.com’ to lowercase. 3. To remove leading spaces from a string ‘my country’. 4. To display current date. 5. To display the value of 106. | | | 5 |
|  | **SECTION E** | | |  |
| 34. | Give output for the following SQL queries:   1. Select substring(‘mysql application’,3,3) 2. Select instr(‘mysql application’, ‘p’) 3. Select round(7756.452,1); 4. Select right(‘mysql application’,3); | | | 4 |
| 35. | Mr. Som, a data analyst has designed the DataFrame df that contains data about Computer Olympiad with ‘CO1’, ‘CO2’, ‘CO3’, ‘CO4’, ‘CO5’ as indexes shown below. Answer the following questions:    . Predict the output of the following python statement:  i. df.shape  ii. df[2:4]  Write Python statement to display the data of Topper column of indexes CO2 to CO4. | | | 4 |

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