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| **PB1/IPCQP/1222/A 28-NOV-2022** | | | | | |
| **PRE-BOARD EXAMINATION- I (2022-23)** | | | | | |
| **SUBJECT: INFORMATICS PRACTICES (C )**  **GRADE: XII** | | | MAX. MARKS: 70TIME:3 HOURS | | |
| **Name:** | | **Section:** | | **Roll No:** | |
| ***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** | | | |  |
| 1 | Mr. Mohan is television cable operator. He is unsure of network formed by television cable network. Help him identify the network.  a) LAN  b) MAN  c) WAN  d) PAN | | | | 1 |
| 2 | Ethernet card, also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is a network adaptor used to set up a wired network.   1. NIC 2. Router 3. Adapter 4. None of the above. | | | | 1 |
| 3. | \_\_\_\_\_\_\_\_\_\_ is used to amplify weak signal?   1. Router 2. Repeater 3. Adapter 4. None of the above | | | | 1 |
| 4. | Which type of values will not be considered by SQL while executing the following statement?  SELECT COUNT(column name) FROM inventory   1. Numeric value 2. Text value 3. NULL value 4. Date value | | | | 1 |
| 5. | In this networking topology, each communicating device is connected with every other device in the network.   1. Star topology 2. Bus topology 3. Tree topology 4. Mesh Topology | | | | 1 |
| 6. | To display first element of a Series object S, you will write   1. S[:] 2. S[0] 3. S[1] 4. S[:2] | | | | 1 |
| 7. | Arshmeet’s is having his credit card and then he is getting some email from bank where they are asking the details of bank. This is known as \_\_\_\_\_\_\_\_\_\_\_\_\_  a) Phishing  b) Eavsdropping  c) Copyright infringement  d) Cyber crime | | | | 1 |
| 8 | Give the output of the following  SELECT ROUND(3234.743);  a) 3234.8  b) 3235  c) 3234.7  d) None of the above | | | | 1 |
| 9. | Pandas object that cannot grow in size.   1. Dataframe 2. Panel 3. Series 4. None of these | | | | 1 |
| 10. | Write the output of the following SQL command.  **SELECT MOD (len(“CBSE IP”),instr(“Hello”,”o”));**  a) 5  b) 2  c) 10  d) 50 | | | | 1 |
| 11. | Which of the following is not an attribute of pandas data frame?   1. length 2. T 3. Size 4. shape | | | | 1 |
| 12. | Dynamic web pages can be created using various languages such as \_\_\_\_\_\_\_\_\_\_.   1. HTML 2. PHP 3. XML 4. None of the above. | | | | 1 |
| 13. | A social science teacher wants to use a pandas series to teach about Indian historical monuments and its states. The series should have the monument names as values and state names as indexes which are stored in the given lists, as shown in the code. Choose the statement which will create the series:  import pandas as pd  Monument=['Qutub Minar','Gateway of India','Red Fort','TajMahal']  State=['Delhi','Maharashtra','Delhi','Uttar Pradesh']   1. S=df.series(Monument,index=State) 2. S=pd.Series(State,Monument) 3. S=pd.Series(Monument,index=State) 4. d. S=pd.series(Monument,State) | | | | 1 |
| 14. | What will be the output for the following code ?  import pandas as pd  S = pd. Series([1,2,3,4,5],index = ['a', 'b', 'c', 'd', 'e'])  print ( s[ 'b'] )   1. 2 2. 1 3. 3 4. 4 | | | | 1 |
| 15. | Complete the query **select \_\_\_\_\_\_\_('2020-05-11')+1;** so that it returns 6   1. Month 2. Day 3. Year 4. Dayofweek | | | | 1 |
| 16. | Consider a string “AS YOU know MORE”  What will be the output of the following queries  Select pow(instr(‘informatics practices’,’atic’),2);   1. 42 2. 46 3. 48 4. 49 | | | |  |
|  | Q17 and 18 are ASSERTION AND REASONING based questions. 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 | | | |  |
| 17. | Assertion (A): - A web server is used to store and deliver the contents of a website to clients such as a browser that request it.  Reasoning (R):- A web server can be software or hardware. | | | |  |
| 18. | Assertion (A):- DataFrame is size mutable.  Reasoning (R): - Dataframe capable of holding multiple type of data. | | | |  |
|  | **SECTION B** | | | |  |
| 19. | What is a web server?  Or  What is the difference between white hat hacker and black hat hacker? | | | | 2 |
| 20. | Lehar is working using MySQL functions of MySQL. Explain her following:   1. What is the purpose of dayname () function? 2. How it is different from day() function? | | | | 2 |
| 21. | Differentiate between group by and order by clause. Support your answer with an example. | | | | 2 |
| 22. | Ritika is a new learner for the python pandas, and she is aware of some concepts of python. She has created some lists, but is unable to create the data frame from the same. Help her by identifying the statement which are blank  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Name=['Manpreet','Kavil','Manu','Ria']  Phy=[70,60,76,89]  Chem=[30,70,50,65]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | 2 |
| 23. | a) To upload a file on remote server, the protocol needed is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  b) Mr. Ram is not able to identify the web page in the given URL. Identify and write it for him. <http://www.cbsenic.in/aboutus.htm> | | | | 2 |
| 24. | What will be the output of the following code:  >>>import pandas as pd  >>>Ser=pd.Series(data=[35,45,55,40])  >>>print(A[A>45]) | | | | 2 |
| 25. | Consider the following DataFrame df and answer the questions.  Name Mark1 Mark2  0 Aamir 22 33  1 Nuzut 42 52  2 Ishrar 34 23  3 Shahid 45 65  4 Furkan 23 56  5 Fatima 45 45  6 Rashid 34 45   1. Rhan wants to add a column called total that is sum of Mark1 and Mark2. Write the statement for same. 2. Write the statement to display name and total. | | | | 2 |
|  | **SECTION C** | | | |  |
| 26. | Help Mr.Rao in Predicting the output of the following:   1. SELECT LENGTH(instr('Republic Day'," ")); 2. SELECT MID('information',3,2); 3. select length( substr(lower('abc 123'),1,3)); | | | | 3 |
| 27. | Write the program to create below data frame.  Name Age Sports  1 Shantanu 45 basketball  2 Fiona 23 Table tennis  3 Arshneel 45 Badminton  4 Raghuvir 34 Football | | | | 3 |
| 28. | Consider the given DataFrame ‘Movie’:  Name Price  0 Dilwale 150  1 Pukar 180  2 Kahani 225  3 Jab we met 500  Write suitable Python statements for the following:  i. Display the records of Dilwale and Pukar.  ii. Delete the column price.  iii. Display column labels. | | | | 3 |
| 29. | In the computer science class, Sunil and Jagdish were assigned the following task by their teacher.  a) Sunil was asked to find information about “India, a Nuclear power”. He was asked to use Google Chrome browser and prepare his report using Google Docs.  b) Jagdish was asked to find information about “Digital India”. He was asked to use Mozilla Firefox browser and prepare his report using Libre Office Writer.   1. What technology is used by Google docs? 2. What are the features of Libre office writer? 3. Which out of the 2 browsers is GNU License?   or  Write the differences between the following —  a) Copyrights and Patents  b) Active and Passive footprint | | | | 3 |
| 30. | Mrs. Dutta a class teacher in “South Point School ” has created the following table to store the records of students:  **student**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Admn | Name | Stream | Optional | Average | | 1001 | Shrishti | Science | CS | 90 | | 1002 | Ashi | Humanities | Maths | 80 | | 1003 | Aditya | Commerce | IP | 60 | | 1004 | Ritu Raj | Science | IP | 65 | | 1005 | Sonali | Commerce | Maths | 60 | | 1006 | Saumya | Science | IP | 65 |   She has written following queries. Give output of same.   1. Select left(name,3) from student where Average!=60 2. Select mid(DISTINCT stream,2,3) from student; 3. Select count(\*) as ‘sutdents in optional’ , optional from student group by optional;   or  Based on the table given above, help Mrs. Dutta writing queries for the following task:   1. To display the name of student getting highest average . 2. To display the names of those students where names contain the letter ‘i’ in the third position.   iii) To display the names of students whose average marks is more than 60. | | | | 3 |
|  | **SECTION – D** | | | |  |
| 31. | 1. Consider the following table –Person  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | PID | PName | DOB | Gender | Address | Salary | | P101 | RRajkumar | 1977-01-12 | M | Delhi | 45678.99 | | P102 | S Singh | 1965-12-31 | M | Delhi | 78954.50 | | P103 | R Shukla | 1987-11-23 | F | Mumbai | 23456.00 | | P104 | K Kamal | 1999-05-21 | M | Mumbai | 43222.99 | | P105 | A Bose | 1989-01-01 | F | Kolkota | 31000.00 |   Write SQL queries for the following:   1. To display the records in decreasing order of Salary. 2. To display Address and Address wise total number of persons. 3. To display the Address and its total salary. 4. To display Address and Address wise oldest person’s age. 5. To display the name and annual salary for all employees. Assuming salary is paid every month.   OR 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. select instr(DRIVERNAME,’M’) from **TRANSPORTER** where MONTHNAME(TRAVELDATE)=’April’; 4. select length(drivername) where salary>10,000; | | | | 5 |
| 32. | Radha Industries has set up its new production unit and sales office at Ranchi. The company compound has 4 buildings as shown in the diagram below:  Distances between these buildings are as follows:  Administrative Office to Factory A 150 m  Factory A to Factory B 50 m  Factory B to Sales Office 100m  Sales Office to Administrative office 200m  Administrative Office to Factory B 125 m  Number of Computers in each of the buildings is follows:  Administrative Office - 15  Factory A – 25  Factory B – 18  Sales Office - 15   1. Suggest the most appropriate topology of the connection between the offices. 2. Suggest a cable layout of connections between the buildings so that each building is directly connected to Administrative Office. 3. Suggest the most suitable place (i.e. building) to house the server of this production unit with a suitable reason. 4. Suggest the placement of the following devices with justification: 5. Repeater 6. Hub/Switch. 7. Suggest the way of communication if Radha wants to have meetings with a person in USA regarding expansion of her work. | | | | 5 |
| 33. | Write a script to draw a bar chart by importing appropriate package:   1. x axis will represent weight   ii. y axis will represent height  iii. x axis label should be “Weight in kg”  iv. y axis label should be “Height in cm”  v. colour of the line should be green  vi. use \* as marker  vii. Marker size as10  viii. The title of the chart should be “Average  weight with respect to average height”.  ix. Line style should be dashed  x. Linewidth should be 2.  OR | | | | 5 |
|  | Create a bar Graph as shown in below pic | | | |  |
|  | **SECTION E** | | | |  |
| 34. | 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.  iv. Give the degree and cardinality of the table. | | | | 4 |
| 35. | Consider the DataFrame, namely Stud  StudentID English IP Accts Eco  0 S2324 100 97 100 95  1 S4343 85 96 88 90  2 S5434 92 95 88 87  3 S6817 65 99 87 89   1. Write the command will print the first three columns of the dataframe . 2. rename the column IP as Informatics Practices 3. Add a new column named total which contains the total of previous 3 subjects. 4. Add a new student with the following values   S3456 78 68 45 56  Or  d) Change the English marks of S6817 to 88. | | | |  |

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