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| **Text  Description automatically generated**  **PB2/IPCEEEQP/1222/A 09-JAN-2023**  **EEE CONSORTIUM**  **PRE-BOARD EXAMINATION – II (2022-23)**  **Sub: Informatics Practices [065]**  **Class-XII**  **TIME: 3 HOURS M.M.70** | | |
| **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. | | |
|  | **PART A** |  |
|  | Ms.Shyam Giri,branch officer of Global communications recently discoveredthatthecommunication between her company’s accounts office and HR office is extremely slow and signals drop quite frequently.These offices are125meters away from each other and connected by an Ethernet cable. What kind of network is formed ?  a) LAN  b) MAN  c) WAN  d) PAN | [ 1 ] |
|  | The act of fraudulently acquiring someone’s personal and private information, such as online account names, login information and passwords is called as ...............   |  |  | | --- | --- | | 1. Scam | 1. Fraud | | 1. Phishing | 1. Plagiarism | | [ 1 ] |
|  | The process of re-selling old electronic goods at lower prices is called \_\_\_\_.   |  |  | | --- | --- | | 1. Refurbishing | 1. Reuse | | 1. Recycle | 1. Reduce | | [ 1 ] |
|  | All aggregate functions ignore NULLs except for the \_\_\_\_\_\_\_ function.   |  |  | | --- | --- | | 1. Avg() | 1. Count(\*) | | 1. Min() | 1. Max() | | [ 1 ] |
|  | If column “Marks” contains the data set (50,80,20,50,20), what will be the output after the execution of the given query?  SELECT SUM (DISTINCT Marks) FROM student;   |  |  | | --- | --- | | 1. 200 | 1. 150 | | 1. 240 | 1. 220 | | [ 1 ] |
|  | Which of the following software allows copy, free use, redistribution, and modification?   1. Licensed 2. Free and Open Source Software (FOSS) 3. General Public License (GPL) 4. All of these | [ 1 ] |
|  | To display the job where the number of employees is less than 3.   1. SELECT JOB, COUNT(\*) FROM EMP WHERE COUNT(\*) < 3; 2. SELECT JOB, COUNT(\*) FROM EMP WHERE COUNT(\*) < 3 GROUP BY JOB; 3. SELECT JOB, COUNT(\*) FROM EMP GROUP BY JOB WHERE COUNT(\*) < 3; 4. SELECT JOB, COUNT(\*) FROM EMP GROUP BY JOB HAVING COUNT (\*) < 3; | [ 1 ] |
|  | Which one of the following is not a scalar function?   |  |  | | --- | --- | | 1. LENGTH() | 1. DAY() | | 1. MID() | 1. COUNT() | | [ 1 ] |
|  | To display the name of employees who are getting more salary than the maximum salary of clerks.  (a) SELECT ENAME FROM EMP WHERE SAL >(SELECT MAX(SAL) FROM EMP   WHERE JOB=’CLERK’);  (b) SELECT ENAME , MAX(SAL) FROM EMP WHERE JOB=’CLERK’;  (c) SELECT ENAME FROM EMP WHERE SAL >MAX(SAL);  (d) SELECT ENAME FROM EMP WHERE JOB=’CLERK’ AND SAL=MAX(SAL); | [ 1 ] |
|  | Which is not a group function?   |  |  | | --- | --- | | 1. Avg() | 1. Mod() | | 1. Count() | 1. Sum() | | [ 1 ] |
|  | A series contains a total of 10 elements including a missing value. The output of count() and len() functions when applied to this Series respectively will be.   |  |  | | --- | --- | | 1. 10,10 | 1. 9,10 | | 1. 9,9 | 1. 10,9 | | [ 1 ] |
|  | PANDAS stands for \_\_\_\_\_\_\_\_\_\_\_\_\_.   |  |  | | --- | --- | | 1. Panel Data Analysis | 1. Panel Data analyst | | 1. Panel Data | 1. Panel Dashboard | | [ 1 ] |
|  | \_\_\_\_\_\_\_ is the process of renting or buying space to house a website on the World Wide Web.   |  |  | | --- | --- | | 1. Webspace | 1. Cloud Computing | | 1. Web Hosting | 1. Web Store | | [ 1 ] |
|  | What will be returned by the given query?  SELECT month(‘2020-05-11’);   |  |  | | --- | --- | | 1. 5 | 1. 11 | | 1. May | 1. November | | [ 1 ] |
|  | \_\_\_\_ gives you right to exclude others from making, selling, using, or importing a particular product or service.   |  |  | | --- | --- | | 1. Trademark | 1. Copyright | | 1. Patent | 1. Plagiarism | | [ 1 ] |
|  | \_\_\_\_\_\_\_\_ is an act of hurt someone using comments, memes, or anything related to mockery on someone.   |  |  | | --- | --- | | 1. Cybercrime | 1. Cyberstalking | | 1. Cyberbullying | 1. Spoofing | | [ 1 ] |
|  | 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 |  |
|  | **Assertion (A): -** Internet cookies are text files that contain small pieces of data, like a username, password and user’s preferences while surfing the internet.  **Reasoning (R):-** To make browsing the Internet faster & easier, its required to store certain information on the server’s computer. | [ 1 ] |
|  | **Assertion (A) :** In the pandas series, the index property is used to fetch the values using index labels.  **Reason (R) :**The series can have only numeric index to work with series. | [ 1 ] |
|  | **PART B** |  |
|  | Write two advantages and two disadvantages of bus topology.  **OR**  Explain the difference between a web hosting and web server with suitable examples. | [ 2 ] |
|  | Shanya Khanna is using a table Doctor. It has the following columns:  Doctor\_code, Dname, ord\_date, She wants to counts the number of doctors registering patients for each day. (If a doctor has more than one patient on a given day, he or she should be counted only once ).  **She wrote the following statement:**  SELECT ord\_date, DISTINCT(COUNTdoctor\_code) FROM Patients;  But she did not get the desired result. Rewrite the above query with necessary changes to help her get the desired output. | [ 2 ] |
|  | What is the difference between WHERE and HAVING clause? | [ 2 ] |
|  | Write a program to generate a series using a dictionary to represent month number and month names. | [ 2 ] |
|  | What are the impacts of E-Waste on the environment?  Or  What is IPR? How it can be legally protected? | [ 2 ] |
|  | Consider two objects x and y. x is a list whereas y is a Series. Both have values 20, 40,90, 110.  What will be the output of the following two statements considering that the above objects have been created already.  a. print (x\*2)  b. print(y\*2)  **Justify your answer.** | [ 2 ] |
|  | **import pandas as pd**  Jodhpur={'Q1':5000,'Q2':8000,'Q3':12000,'Q4': 18000}  Jaipur={'A' :13000,'B':14000,'C':12000}  totSales={1:Jodhpur,2:Jaipur}  df=pd.DataFrame(totSales)  **Answer the following:**   1. List the index of the DataFramedf 2. List the column names of DataFramedf. | [ 2 ] |
|  | **SECTION C** |  |
|  | Consider following table in MySQL named ‘ITEMS’ and predict the output.     |  |  |  | | --- | --- | --- | | **ITEM\_NO** | **ITEM\_NAME** | **COST** | | 101 | MICROWAVE | 5000 | | 102 | REFRIDGERATOR | NULL | | 103 | TELEVISION | 4000 | | 104 | WASHING MACHINE | 6000 | | 105 | DISH WASHER | NULL |  1. SELECT RIGHT(ITEM\_NAME,4) FROM ITEMS WHERE COST<5000; 2. SELECT INSTR(ITEM\_NAME,'R') FROM ITEMS; 3. SELECT SUBSTR(ITEM\_NAME,-5,3) FROM ITEM; | [ 3 ] |
|  | Write a Python code to create a DataFrame with appropriate column headings from the list given below:  [[1,'Multimedia',98],[2,'CS',95],[3,'IP' ,96],[3,'Networking',88]] | [ 3 ] |
|  | Write a program in Python Pandas to create the following DataFrame ‘CRICKET’.    Write Python code to perform the following operations on the DataFrame:   1. Add the scores of ODI and T20 and assign to column “TotalScore”. 2. Display Name and ODI columns of the DataFrame. 3. Remove column Test from the Dataframe. | [ 3 ] |
|  | **Suhana celebrated her birthday with her family. She was excited to share the moments with her friend Dev. She uploaded selected images of her birthday party on a social networking site so that Dev can see them. After few days, Suhana had a fight with Dev. Next morning, she deleted her birthday photographs from that social networking site, so that Dev cannot access them. Later in the evening, to her surprise, she saw that one of the images which she had already deleted from the social networking site was available with their common friend Gayatri. She hurriedly enquired Gayatri “Where did you get this picture from?”. Gayatri replied “Dev forwarded this image few minutes back”.**  Help Suhana to get answers for the following questions. Give justification for your answers so that Suhana can understand it clearly.   1. How could Dev access an image which I had already deleted? 2. Can anybody else also access these deleted images? 3. Had these images not been deleted from my digital footprint?   **OR**  What do you understand by plagiarism? Why is it a punishable offence? Mention any two ways to avoid plagiarism. | [ 3 ] |
|  | Consider a MySQL table ‘product’    ***Write SQL queries for the following:***   * + - Display maximum PROD\_QTY.     - Display the value of each product where the value of each product is calculated as  PROD\_PRICE \* PROD\_QTY     - Display average PROD\_PRICE.   **OR**  Write any three differences between Single\_row functions and Aggregate functions. | [ 3 ] |
|  | **SECTION D** |  |
|  | Write suitable SQL query for the following:  i) To display names “Mr. James” and “Ms. Smith” in lower case.  ii) To display current date and time.  iii) To extract date from a given datetime value ‘2020-12-21 09:30:37’.  iv) To remove trailing spaces from string “ Technology Works ”  v) To compute the remainder of division between 125 and 17.  **OR**  Explain the following SQL functions using suitable examples.  i) DAYNAME ()  ii) LENGTH ()  iii) POWER ()  iv) AVG ()  v) MID() | [ 5 ] |
|  | Chanakya University is setting up its academic blocks at Dehradun and is planning to set up a network. The University has 3 academic blocks and one Human Resource Centre as shown in the diagram below:    Centre-to-Centre distances between various blocks/centre is as follows:  Number of computers in each of the blocks/centres is as follows:    (i) Suggest the most suitable place (i.e., block/centre) to install the server of this University  with a suitable reason.  (ii) Suggest an ideal layout for connecting these blocks/centres for a wired connectivity.  (iii) Which device will you suggest to be placed/installed in each of these blocks/centres to  efficiently connect all the computers within these blocks/centres?  (iv) Suggest the placement of Repeater in the network with justification.  (v) The university is planning to connect its admission office in Delhi which is more than   1,250 km from the university. Which type of network out of LAN, MAN or WAN will be  formed? Justify your answer. | [ 5 ] |
|  | Write the code to draw a bar chart by importing appropriate package:  1. The title of the bar chart is ' FIFA World Cup’  2. teams=['Qatar', 'Argentina', 'Saudi', 'Brazil', 'Kuwait’'] X-axis  3. runs=[4, 6, 3, 8, 2] as the values for y-axis  4. Label x-axis as 'Teams'  5. Label y-axis as 'Goals'  6. Plot the bar chart  7. Display the bar chart on the screen  **OR**  Modes of transport used by students at a school are given below:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **School Bus** | **Private Bus** | **Bicycle** | **Van** | **By Foot** | | 640 | 360 | 490 | 210 | 150 |   Write a Python script to draw a line graph representing the above data and add appropriate title, legends x and y labels. | [ 5 ] |
|  | **SECTION E** |  |
|  | Consider a table Employee with the following data:   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **ENO** | **ENAME** | **SALARY** | **BONUS** | **DATEOFJOINING** | | E01 | Harsh Arora | 35000 | NULL | 02-11-2020 | | E02 | Nilesh Boob | 55000 | 32.34 | 16-03-2008 | | E03 | Khushboo Burat | 70000 | Null | 18-09-2020 | | E04 | Naveen Rathi | 65000 | 21.54 | 31-07-2008 | | E05 | Kunal Verma | 78000 | 67.89 | 05-02-2020 | | E06 | Rajpal Singh | 60000 | 56.87 | 09-07-2009 | | E07 | Leena Singh | 78000 | 67.89 | 15-19-2020 |   **Write SQL queries using SQL functions to perform the following operations:**   1. Display employee name and bonus after rounding off to zero decimal places. 2. Display the position of occurrence of the string “ee” in employee names. 3. Display total salary of Nilesh, Khushboo and Leena.   **OR (Option for part iii only)**  Write a query to display year wise average salary. | [1+1+2] |
|  | Mr. Ankit is working in an organization as data analyst. He uses Python Pandas and Matplotlib for the same. He got a dataset of the passengers for the year 2010to 2012 for January, March and December. His manager wants certain information from him, but he is facing some problems. Help him by answering few questions givenbelow:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | **Year** | **Month** | **Passenger(I)** | **Passenger(II)** | **Code** | | **A** | 2010 | Jan | 25 | 12 | A01 | | **B** | 2010 | March | 50 | 5 | A02 | | **C** | 2012 | Jan | 35 | 13 | A03 | | **D** | 2010 | Dec | 55 | 17 | A04 | | **E** | 2012 | Dec | 65 | 13 | A05 | | **F** | 2015 | Jan | 34 | 23 | A08 |  1. Predict the output of the following python statement: 2. df.shape 3. df[1:3] 4. Write Python statement to display the data of Month column of indexes C to E.   **OR (Option for part B only)**  Write Python statement to compute and display the difference of data of Passenger(I) column and Passenger (II) column of the above given DataFrame. | [1+1+2] |

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