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| |  |  | | --- | --- | |  | | | **PB1/IPHQP/1223/E 05-DEC-2023** | | | **EEE CONSORTIUM** | | | **PRE-BOARD EXAMINATION – II** | | | **CLASS: XII (2023-2024)**  **SUBJECT: INFORMATICS PRACTICES (065)** | | | **Maximum Marks :70** | **Time Duration: 3 hours** |   **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** |  |
|  | It is an electronic device that receives a weak signal and regenerates it  a.Amplifier b. Repeater c. Router d.Modem | [ 1 ] |
|  | Identify the process of removing a substance from another substance by passing water through it.a. Leaching b. Refurbishing c. Dismantle d. Reduce | [ 1 ] |
|  | In which type ofdigital footprint the users deliberately share information about themselves either by using social media sites or by using websites.   1. Passive b. Active c. Objective d. Subjective | [ 1 ] |
|  | Which one of the following is not an aggregate functio?   1. ROUND() b.SUM() c. COUNT() d.AVG() | [ 1 ] |
|  | 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. 20500 b. 10000 c. 20000 d.33500 | [ 1 ] |
|  | Identify the program or software that helps to extend and modify the functionality of the browser.   1. Plug-ins b. Add-ons c. FOSS d. Freeware | [ 1 ] |
|  | A function used for importing data from a csv file in Python is:  a. read.csv() b. read\_csv() c. read\_data() d. csv\_read() | [ 1 ] |
|  | Mr. Roger is using a table LIBRARY. It has the following columns:  BCode, BName, Price, author. He wants to display maximum price Author wise.  He wrote the following command:  SELECT Author, Max(Price) FROM LIBRARY;  But he did not get desired result.  Which of the following is a correct query to perform the given task?  i. SELECT Author, Max(Price) FROM LIBRARY GROUP BY AUTHOR;  ii. SELECT Author, Max(Price) FROM LIBRARY WHERE GROUP BY AUTHOR;  iii. SELECT Author, Max(Price) LIBRARY WHERE Max(Price) GROUP BY AUTHOR;  iv. SELECT Author, Max(Price) FROM LIBRARY WHERE GROUP BY AUTHOR; | [ 1 ] |
|  | "I am a text functions,that takes text as parameter and returns integer". Who am I?  a.Substr() b. Left() c. Ucase() d.Instr() | [ 1 ] |
|  | Identify the type of error.  import pandas as pd  S1 = pd.Series(data = (31, 2, -6), index = [7, 9, 3, 2])  print(S1)  a. SyntaxError b. IndexError c.ValueError d.Name Error | [ 1 ] |
|  | How many values will be modified by last statement of given code?  import pandas as pd  S1 = pd.Series(['NewDelhi', 'WashingtonDC', 'London', 'Paris'], index=['A', 'B', 'C', 'D'])  S1['A' : 'C'] = 'ND'  a. 1 b. 2 c. 3 d. 4 | [ 1 ] |
|  | Identify output of the following Python code:  import pandas as pd  df=pd.DataFrame([10,20,30])  print(df)   |  |  | | --- | --- | |  |  | |  |  | | [ 1 ] |
|  | In which kind of cybercrime, the attacker gains access to the computer and blocks the user from accessing it and blackmails the victim to pay a certain amount.   1. Blackmail virus b. Ransomware c. Spyware d.Phishing | [ 1 ] |
|  | In India, which act hasbeen enacted to punish people responsible for causing any form of pollution by paying for the damage done to the natural environment.   1. Environmental Protection Act, 1986 b. Environmental Conservation Act, 1986 2. Environmental Safety Act, 1986 d. Environmental Preservation Act, 1986 | [ 1 ] |
|  | A webpage whose content is generated every time it is loaded is called a \_\_\_\_\_\_\_\_\_\_\_.   1. Static webpage b. Dynamic webpage c.Home page d. Master page | [ 1 ] |
|  | In which year the IT Act, 2000 updated?   1. IT Act, 2007 b. Advanced IT Act, 2000 c. IT Act, 2008 d. IT Act, 2009 | [ 1 ] |
|  | **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.   1. Both A and R are true, and R is the correct explanation for A 2. Both A and R are true, and R is not the correct explanation for A 3. A is True but R is False 4. A is false but R is True | [ 1 ] |
|  | **Assertion –** Two basic data structure in Python are: Series and Dataframe. But both are different from each other.  **Reason -** Series stores heterogenous data while Dataframe stores homogenous data.   1. Both A and R are true, and R is the correct explanation for A 2. Both A and R are true, and R is not the correct explanation for A 3. A is True but R is False 4. A is false but R is True | [ 1 ] |
| **SECTION-B** | | | |
|  | Differentiate between Web server and Web hosting?  OR  Ms. Vidya Chauhan is confused between Proprietary and Open-source software. Mention at least two points of differences to help her to understand the same. | [ 2 ] |
|  | The python code written below has syntactical errors. Rewrite the correct code and underline the corrections made.  Import panda as pd  data=[[21101,'MANJUSH',58],[ 21102,'AKSHAY',60],[ 21103,'ANN' ,76], [21104,'NITHYA',48]]  df=pd.Dataframe(data,column=['Rno','Name', 'Marks'],Index=[1,2,3,4])  print(df) | [ 2 ] |
|  | Consider the given SQL string: “Mental Toughness Helps You Succeed”.  Write suitable SQL queries for the following:   1. To display word ‘Toughness’. 2. To display the position of the substring 'Helps' in the given string. | [ 2 ] |
|  | Give the output:  import pandas as pd  c=['red','green','blue','pink','black','white']  p=pd.Series(c,index=[1,2,3,4,5,6])   1. print(p[1:5:2]) 2. print(p[-1:-4:-1]) 3. print(p[-1:-5:]) 4. print(p[2]) | [ 2 ] |
|  | Nowadays all of us frequently use social media to connect with our friends. Give any two netiquettes that we should follow while communicating on social media. | [ 2 ] |
|  | Carefully observe the following code:  import pandas as pd  dic={'pid': [101, 102, 103, 104, 105],  'pname': ['Shyam', 'Roushan', 'Archit', 'Medha', 'Lalit'],  'sports': ['Cricket', 'Tennis', 'Football', 'Cricket','Cricket'],  'points': [45000, 20000,15000,53000,60000]}  player-pd. DataFrame (dic)  print (player)  Write Python statements for the following:  (i) In the dataframe player created above, set the row labels as 'Player1', 'Player2', 'Player3', 'Player4', 'Player5'.  (ii) Rename the column 'points' to 'netpoint' in the DataFrame player. | [ 2 ] |
|  | What is the difference between Where and Having clause when used along with the select statement? Explain with an example. | [ 2 ] |
| **SECTION-C** | | | |
|  | Consider the following records in 'Cars' table and answer the given questions:     1. Write SQL query that will give the output as:   Blu  Bla  Bro  Blu   1. Write command for the following:   To change the color of Model with code as 103 to 'Green'.   1. How many tuples are present in the Cars table? Also identify the most suitable column of the Carstable to mark as primary key column.   **OR**  **Predict the output for the following:**   1. SELECT MAKE, MODEL FROM CARS WHERE PRICE > 30000.00; 2. SELECT COUNT(\*) AS ‘TOTALCARS’ FROM CARS WHERE YEAR = 2022; 3. SELECT LEFT(MAKE,3) FROM CARS WHERE MODEL LIKE "C%"; | [ 3 ] |
|  | Given here is a Dataframe of Sales data of four months stored with name sales\_df.     1. Write a Python code to find total sales of July month. 2. Write a Python code to add the sales of August month with [70,94,80,93] data. | [ 3 ] |
|  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Create a table *Department*including constraintsand insert new record in the table as 101, ‘Sales’, ‘delhi’, 120.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Column Name** | **Dept ID** | **DeptName** | **DepartLOC** | **Distance** | | Key Type | Primary |  |  |  | | Constraint |  | NOTNULL |  |  | | Datatype | Number | Varchar | Varchar | Number | | Length | 2 | 20 | 20 | 4 | | | [ 3 ] |
|  | Samridh has recently changed his school so he is not aware of the people, but someone is posting negative demeaning comments on his social media profile. He is also getting repeated mails from unknown people. Every time he goes online, he finds someone chasing him online.  i. Samridh is a victim of \_\_\_\_\_\_\_\_\_\_\_.  ii. The action that Samridh should take to handle it.  iii. Which act is use to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication. | [ 3 ] |
|  | **Consider the given DataFrame ‘Genre’:**    Write suitable Python statements for the following:   1. Add a column called Num\_Copies with the following data: [300,290,450,760]. 2. Add a new genre of type ‘Folk Tale' having code as “FT” and 600 number of copies. 3. Rename the column ‘Code’ to ‘Book\_Code’. | [ 3 ] |
| **SECTION-D** | | | |
|  | Ashu is a student of class 12 computer science. He got an assignment from the school. He has done the entire assignment and having doubt in the following questions. Being a friend of Ashu, explain him the following questions.  a. Name the functions in SQL which removes the only leading or only trailing spaces.  b. Name any two Date functions of SQL which returns the text value.  c. What is the difference between count (column name) and count (\*).  d. Aggregate function can be used with date values (True or False),Justify with example. | [ 4 ] |
|  | Consider the following dataframe and do as directed:  import pandas as pd  d={‘Mouse’:[150,200,300,400],  ‘Keyboard’:[180,200,190,300],  ‘Scanner’:[200,280,330,450]}   1. Predict the output:   a) print(df.iloc[1][2])  b) print(df.loc[‘Feb’,’Scanner’])   1. Write code to access data of Mouse and Scanner columns. 2. Write code to access data of all columns where mouse data is more than 200.   OR  (Option for part iii only)  Write a program that reads from a CSV file (D:\\Hardware.csv) | [ 4 ] |
| **SECTION-E** | | |
|  | Write Suitable MySQL query for the following:  i. Display 4 characters from third position of string “Computer Lab”.  ii. Round off the value 2.372 to one decimal place.  iii. Display today’s dayname  iv. Remove the extra spaces from both side of the string “ Python is Dangerous”.  v. Find out remainder after dividing 37 by 10  OR  Consider the following table Persons:  **Table: Persons**  FirstName LastName  Naveen Gupta  Ram Sharma  Mohan Kumar  Aayu Chugh  Write MySQL queries for the following.  i. To Insert a new record into the persons table.  ii. To Change the ‘Chugh’ to ‘Bajaj’ in the LastNAme column of Persons table.  iii. To delete records where the FirstName is ‘Gupta’.  iv. To add a new column ‘Contact No’ of suitable datatype.  v. To display details of all FirstName starting with ‘A’. | [ 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 ] |
|  | Create a bar Graph as shown in below pic.    Also, give suitable python statement to save this chart in E: drive of the computer with name ‘sales.png’.  **OR**  Write a python program to plot a line chart based on the given data to depict the  weekly study patterns for all the seven days of the week(Sun,Mon,Tue,Wed,Thu,Fri,Sat,Sun)  Study\_Hours=[5,4,6,5,7,8,10]  Also, give suitable python statement to save this chart in d: drive of thecomputer with name ‘study.png’ | [ 5 ] |

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