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| **PB1/CSQP/1223/A 23-NOV-2023** | | | |
| **PRE BOARD EXAMINATION - I (2023-2024)** | | | |
| **Subject :Computer Science (083)**  **Grade : XII** | | Max. Marks: 70Time: 3 Hrs | |
| **General Instructions:**   * Please check this question paper contains 35 questions. * The paper is divided into 5 Sections- A, B, C, D and E. * Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark. * Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks. * Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks. * Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks. * Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks. * All programming questions are to be answered using Python Language only | | | |
|  | **SECTION A** | |  |
|  | Find the invalid identifier from the following  (a) data\_rec (b) del (c) \_abc (d) ab.c | | 1 |
|  | Fill in the blank:  ---------------command is used to remove a record from the table in MySql.  (a) update (b)remove (c) delete (d) drop | | 1 |
|  | What will the following expression be evaluated to in Python?  print(13 % 4 - (8 \*\* 3))  (a) -511 (b) -23 (c) -10 (d) -1 | | 1 |
|  | State True or False  “We can’t assign same value to multiple variables in Python.” | | 1 |
|  | Which of the following command will modify the existing values of a table from MYSQL  database?  (a) DELETE TABLE  (b) UPDATE <TABLE\_NAME>  (c) REMOVE TABLE  (d) ALTER TABLE | | 1 |
|  | In this technique, first the complete physical connection between two computers is established  and then data is transmitted from the source computer to the destination computer.  a) Packet Switching  b) Circuit Switching  c) Message Switching  d) IP Switching | | 1 |
|  | Given the following tuple  tpl=(1, 3, 5)  Which statement will replicate the contents of tuple?  a. tpl + 2  b. tpl \* 2  c. tpl / 2  d. tpl - 2 | | 1 |
|  | Select the correct output of the code:  a = [12, 13, 14, 15, 16, 17, 18, 19, 20]  print(a[2:10:3])  (a) [13 ,14, 15, 16]  (b) [12 ,13, 14 15 16 17 18 19 20]  (c) [14, 15, 16, 17, 18, 19, 20]  (d) [14 ,17, 20] | | 1 |
|  | Which of the following statement(s) would give an error after executing the following code?  t="Hello Users" # Statement 1  print(t) #Statement 2  t='Bye' # Statement 3  t[0]=!39 # Statement 4  t=t+"Bye" # Statement 5  (a) Statement 3  (b) Statement 4  (c) Statement 5  (d) Statement 4 and 5 | | 1 |
|  | What possible outputs(s) will be obtained when the following code is executed?     1. 17 #17 (b) 16#16 (c) 19#20 (d) 20#17 | | 1 |
|  | Network in which every computer is capable of playing the role of a client, or a server or both at same time is called  (a) local area network  (b) peer-to-peer network  (c) dedicated server network  (d) wide area network | | 1 |
|  | Which of the following function calls can be used to invoke the below  function definition?  def test(a, b, c, d):  # Function body  (a) test(1, 2, 3, 4)  (b) test(a = 1, 2, 3, 4)  (c) test(a = 1, b = 2, c = 3, 4)  (d) test(4, b = 2, c = 3, d=0)  (i) a and d (ii) a,c and d (iii) c and d (iv) a,b,c and d | | 1 |
|  | Compare the following python code shown below and state the output     1. ValueError, NameError 2. AttributeError, ValueError 3. NameError, TypeError 4. TypeError,ValueError | | 1 |
|  | --------is to regenerate the signal over the same network before the signal becomes too weak.  (a) Hub (b) Repeater (c) Switch (d) Router | | 1 |
|  | Which of the following function is not an aggregate function?  (a) Round () (b) Sum() (c) Count () (d) Avg () | | 1 |
|  | Assume that there is a text file Text.txt contains the following data  “Python is a coding language”  Choose the option after executing the following code     1. thon b) love c) I lo d) Pyth | | 1 |
|  | Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct  choice as  (a) Both A and R are true and R is the correct explanation for A  (b) Both A and R are true and R is not the correct explanation for A  (c) A is True but R is False  (d) A is false but R is True | | 1 |
|  | Assertion (A):- pickle.load() function raises EOFError when it reaches to end of file.  Reasoning (R):- EOFError is handle by try and catch block. | | 1 |
|  | Assertion (A): Keyword arguments are the named arguments with assigned values being  passed in the function call statement.  Reason (R): We can give keyword arguments in any order provided their names are same as that  of parameters. | |  |
|  | **SECTION B** | |  |
|  | 1. Expand the following terms:   TCP/IP, XML   1. Give one difference between bus topology and star topology   OR   1. Define the term URL and domain. 2. How is http different from https? | | 2 |
| Q20. | The code given below accepts a number as an argument and returns the reverse number. Observe the following code carefully and rewrite it after removing all syntax and logical errors. Underline all the corrections made. | | 2 |
| Q21. | Write a function LowerDiagonal(NL) in Python, that takes the nested list NL as an argument and displays the lower triangular matrix.[Assume that it is a square matrix]  For example, Consider the following nested list  NL=[[1,2,3],[4,5,6],[7,8,9]]  The output should be:  [1]  [4,5]  [7,8,9]  OR  Write a function, Dictwords(STRING), that takes a string as an argument and returns a dictionary contains word as key and length of each word of a string is values  For example, if the string is "There is a monkey in the zoo.The monkey was very naughty ", then the dictionary is  {‘THERE’:1,’IS’:1,’A’:1,’MONKEY’:2,’IN’;1,’THE’:2,’ZOO’:1,’WAS’;1,’VERY’:1,’NAUGHTY’:1} | | 2 |
| Q22. | Find the output of the following code: | | 2 |
| Q23. | Write the Python method/built in functions for the following tasks :   1. The function which takes only numeric values, it raises an error TypeError if the data is non-numeric values in the list. 2. The string function divided the strings into exact 3 parts in the form of tuple.   OR  A list named Marklist stores marks of students of a class. Write the Python command to import the required module and (using built-in function) to display the most common mark from the given list. | | 2 |
| Q24. | Ms. Maya is working in a database named SCHOOL , in which she just created a table named “Student ” containing columns Sname, Stream , Section, and Mark. After creating the table, she realized that the attribute “section” has to be deleted and need to add the column “ClassTr”, this attribute can not be left blank. Help her in writing an SQL command to complete the task  OR  Mr. Zuckenberg , created a table named “ATHLETICS” containing columns Id, Name\_Sport, no\_of\_players, and category.  After creating the table,he inserted some records in the table. But while inserting one record he got the message" Data too long for column 'category"' at row 1, Help him identify the problem and write the commands to complete this | | 2 |
| Q25. | Predict the output of the following code: | | 2 |
|  | **SECTION C** | |  |
| Q26. | Find the output of the following code: | | 3 |
| Q27. | Observe the table CHIPS and find the output of the following SQL statements     1. SELECT COUNT(DISTINCT(BRAND\_NAME)) FROM CHIPS; 2. SELECT SUM(PRICE) , FLAVOUR FROM CHIPS GROUP BY FLAVOR; 3. SELECT BRAND\_NAME,PRICE FROM LAB ORDER BY BRAND\_NAME , PRICE DESC; | | 3 |
| Q28. | Write a function in Python to read a text file, ARTICLE.txt and count the number of articles separately (‘a’,’an’,’the’)  OR  Write a function, lineword() in Python that counts and displays the number of lines that start with one character in the text file named Poem.txt.  For example:  If file contains  An aeroplane is in the sky  A girl is playing there  The rose is red  Then the output is  Number of lines starts with one character is : 1 | | 3 |
| Q29. | Consider the following SQL table and write SQL commands     1. To display the E\_NO and NAME of those female employees from the table EMPLOYEE who are born in September. 2. To display the number of employees gender wise. 3. To modify the salary to NULL for all those employees whose E\_NO is 1001,1004,1007. | | 3 |
| Q30. | A list contains following record of an employee:  [Employee\_name, Mobile\_number, State]  Write the following user defined functions to perform given operations on the stack named  employee:  (i) Add\_element() - To Push an object containing name and mobilenumber of  employees who lives in Haryana to the stack  (ii) Delete\_element() - To Pop the objects from the stack and display them.Also, display  “Stack Empty” when there are no elements in the stack.  OR  Write a function in Python, Push(SDetails) where , SDetails is a dictionary containing the details  of student, details –{Sname, Percentage}  The function should push the names of those students in the stack who have percentage greater  than 90. Also display the count of students pushed into the stack. | | 3 |
|  | **SECTION D** | |  |
| Q31. | Observe the table given below and answer the questions:     1. Write SQL statement to display Firstname, lastname, Total salary (Total salary=Salary+Benefits) 2. Write SQL statement to display the Firstname, Benefits of all employees whose lastname contains ‘u’ 3. Write SQL command to display the minimum salary of each designation where there are more than two employers 4. Display the structure of the table empsalary; | | 4 |
| Q32. | Vedantu is a Python programmer working in a school. For the Gratis, he has created a csv file named Events.csv, to store the details of the events and the number of participants in different events. The structure of Events.csv is :  [Ev\_Id, Ev\_Name, Numberofparticpants]  For efficiently maintaining data of the event, Vedantu wants to write the following user defined functions:  Accept() – to accept a record from the user and add it to the file Events.csv. The column headings should also be added on top of the csv file.  DispCount() – to count the number of events who have more than 5 participants.  As a Python expert, help him to complete the task. | | 4 |
|  | **SECTION E** | |  |
| Q33. | Uplifting Skills Hub India is a knowledge and skill community which has as aim to uplift the standard of knowledge and skills in the society. It is planning to setup its training centers in multiple towns and villages pan India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as follows    As a network consultant, you have to suggest the best network related solutions for their issues/ problems raised in (i) to (iv) keeping in mind the distances between various locations and other given parameters. Shortest distances between various locations  VILLAGE 1 to B\_TOWN 2 KM  VILLAGE 2 to B\_TOWN 1.0 KM  VILLAGE 3 to B\_TOWN 1.5 KM  VILLAGE 1 to VILLAGE 2 3.5 KM  VILLAGE 1 to VILLAGE 3 4.5 KM  VILLAGE 2 to VILLAGE 3 2.5 KM  A\_CITY Head Office to B\_HUB 25 KM  Number of computers installed at various locations are as follows  B\_TOWN 120  VILLAGE 1 15  VILLAGE 2 10  VILLAGE 3 15  A\_CITY Head Office 6   1. Suggest the most appropriate location of the SERVER in the B\_HUB (out of the 4   locations), to get the best and effective connectivity. Justify your answers.   1. Suggest the best wired medium and draw the cable layout (location t location) efficiently connect various locations within the B\_HUB. 2. Which hardware device will you suggest to connect all the computers within each location of B\_HUB? 3. Which server/protocol will be most helpful to conduct live interactions of Experts from Head Office and people at all locations of B\_HUB? 4. The organization is planning to link its head office in a hilly region where cable connection is not feasible. Suggest an economic way to connect it; the company is ready to compromise on the speed of connectivity. Justify your answer | | 5 |
| Q34. | (i) Differentiate between rb+ and wb+ file modes in Python.  (ii) Consider a file, EVENTS.DAT, containing records of the following structure:  [EventName, TeamName, No\_Participants]  Write a function, copyData(), that reads contents from the file Events.DAT and copies the records with event name as “Hackathon” to the file named HACKATHON.DAT. The function should return the total number of records copied to the file HACKATHON.DAT.  OR  (i) What is pickling and unpickling in Python ?  (ii) A Binary file, MOVIE.DAT has the following structure:  {MOVIEID:[MOVIENAME,RATING]}  Write a user defined function, findrating(rating), that accepts rating as parameter and displays all the records from the binary file MOVIE.DAT, that have the value of RATING as rating | | 5 |
| Q35. | (i) Define the term Domain with respect to RDBMS. Give one example to support your answer.  (ii) Mukesh wants to write a program in Python to insert the following record in the table named MEMBER in MYSQL database, CLUB  • Mno(Member Number )- integer  • Mname(Member Name) - string  • DOB (Date of birth) – String  • Maddress(Member address) – String  Note the following to establish connectivity between Python and MySQL:  • Username - root  • Password - tiger  • Host - localhost  The values of fields Mno, Mname, DOB and Maddress has to be accepted from the user. Help Mukesh to write the program in Python.  OR  (i) Table 'Club' has 4 rows and 3 columns. Table 'Member' has 2 rows and 5 columns. What will  be the degree and cardinality of the Cartesian product of them?  (ii) Aashi has created a table named Student in MYSQL database,  SCHOOL:  • rno(Roll number )- integer  • name(Name) - string  • DOB (Date of birth) – Date  • Fee – float  Note the following to establish connectivity between Python and MySQL:  • Username - root  • Password - tiger  • Host - localhost  Aashi, now wants to display the records of students whose fee is more than 5000. Help her to write the program in Python. | | 5 |

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