**CSI MODEL EXAM**

**Class: XII**

**Computer Science (083) Question Paper**

**Time allowed: 3 Hours Maximum Marks: 70**

**General Instructions**

* Please check this question paper contains 35questions.
* The paper is divided into 4 Sections-A, B, C, D and E.
* Section A, consists of 18 questions(1to18). Each question carries 1 Mark.
* Section B, consists of 7questions (19to25). Each question carries 2 Marks.
* Section C, consists of 5questions(26to30). Each question carries 3 Marks.
* Section D, consists of 2questions(31to32). Each question carries 4 Marks.
* Section E, consists of 3questions (33to35). Each question carries 5Marks.
* All programming questions are to be answered using Python Language only.

|  |  |  |
| --- | --- | --- |
| **Question**  **No** | **Question** | **Marks** |
| **SECTION-A** | | | |
| 1 | **Which of the following is an invalid variable?**  (a) String\_1 (b) 1\_String  (c) \_\_String (Two underscores) (d) \_String (one underscore) | 1 |
| 2 | **A table, Persons is defined as shown below:**    What will be the output of the above MySQL statement?   1. PersonID FirstName 2. JOHNS 3. PersonID FirstName 4. JOHNSON 5. Error 6. None of the above | 1 |
| 3 | **What will be the output of the following statement?**    a) Error b) [15,25,35,45,55]  c) No output d) [10,20,30,40,50,5] | 1 |
| 4 | **Consider the following statements involving expression, E:**    Which one of the following will be the correct output, if the above expression is evaluated?  a) True  b) False  c) NONE  d) NULL | 1 |
| 5 | A table ‘student’ has 4 columns and 10 rows and ‘student 2’ has 5 columns and 5 rows. If we take Cartesian product of these two tables, what is the degree and cardinality of the resultant table?  a.20,50 b.8,50 c.20,5 d.15,8 | 1 |
| 6 | Assume that 50 employees are working in an organization. Each employee has been allotted a separate workstation to work. In this way all computers are connected through the server and all these workstations are distributed over two floors. In each floor, all the computers are connected to a switch. Identify the type of network  a) LAN (b) PAN (c) MAN (d) WAN | 1 |
| 7 | **Given the following dictionaries:**    Which statement will merge the contents of both dictionaries?  a. dict\_exam.update(dict\_result) b. dict\_exam + dict\_result  c. dict\_exam.add(dict\_result) d.dict\_exam.merge(dict\_result) | 1 |
| 8 | **Identify the output of the following Python statements:**    (a) GOOD MORNING !Good morning (b Good morning Good Morning!  (c) Good morning! Good Morning! (d) God morning Good Morning! | 1 |
| 9 | Consider the following MySQL table, employee created as follows:    Which of the following INSERT statements will throw error?   1. INSERT INTO employee (EMPID, NAME) VALUES   (1001,'ADAM MICHAEL'), (1002,'BOBBY FISHER'), (1003,'CAESAR PETER');   1. INSERT INTO employee (EMPID, NAME) VALUES   (1001,'ADAM MICHAEL'), (1002,'BOBBY FISHER'),  (1003,'ADAM MICHAEL');   1. All of the above 2. None of the above | 1 |
| 10 | **For a function header, calc defined as follows:**    **which of the following function calls will give an error?**   1. calc(15,25) (b) calc(x=15,y=25) (c) calc(y=25) (d) calc(x=25) | 1 |
| 11 | **What is TRUE about the Candidate key?**   1. Candidate keys are considered for all attributes except the primary key 2. Both the candidate keys and the primary key are equally strong 3. Both A and B 4. None of the above | 1 |
| 12 | **Fill in the blank:**  In case of switching, before a communication starts, a dedicated path is identified between the sender and the receiver. | 1 |
| 13 | **The write() actually writes the data onto a buffer.**  Which of the following methods will result in the contents from the buffer moved to the file located on the permanent storage?  a) close()  b) writeline()  c) open()  d) None of the above | 1 |
| 14 | **The mandatory arguments required to connect any database from Python.**  a) User name, Password, Hostname, Database name, Port. b) User name, Password, Hostname  c) User name, Password, Hostname, Database name  d) User name, Password, Hostname, Port | 1 |
| 15 | **Fill in the blank.**  A network with all client computers and no server is called \_\_\_\_\_\_\_\_\_\_  a) Networking  b) Peer to Peer network  c) Client Server network  d) All of the above | 1 |
| 16 | **Which of the following mode in the file opening statement results or generates an error if the file does not exist?**  a) a+  b) r+  c) w+  d) None of the above | 1 |
| 17 | Q. 17 and 18 are ASSERTION·(A) and REASONING (R) 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  (c) (A) is true but (R) is false.  (d) (A) is false but (R) is true.  Assertion (A): A function is said to be recursive if it calls itself.  Reasoning(R): A recursive function contains its own function call statement within its function body. | 1 |
| 18 | Assertion (A): If we know a computer's IP address, we can communicate with that computer from anywhere in the world.  Reasoning(R): IP address, also known as Internet Protocol address, is a unique address that can be used to uniquely identify each node in a network. The IP address are assigned to each node in a network that uses the Internet Protocol for communication. | 1 |
|  | **SECTION B** |  |
| 19 | (i)Expand the following terms: PPP, URL  (ii)Give one difference between XML and HTML.  **OR**  (i) What is the use of TELNET?  (ii)How is http different from https? | 2 |
| 20 | Write a Python method/function SwapParts(Word) to swap the first part and the second part of the string Word. Assuming there are an even number of letters in the string Word. The function should finally display the changed Word.  For example :  If Word = ‘Elephant’ then the function should convert Word to ‘hantElep’ and display the output as:  Changed Word is hantElep  OR  Write definition of a Method MSEARCH(STATES) to display all the state names from a list of STATES, which are starting with alphabet M.  For example: If the list STATES contains ["MP","UP","WB","TN","MH","MZ","DL","BH","RJ","HR"]  The following should get displayed  MP  MH  MZ | 2 |
| 21 | **Write the Python statement for each of the following tasks using BUILT-IN functions/methods only:**   1. To insert an element 400 at the Sixth position, in the list L1. 2. To check whether a string named, message ends with a full stop / period or not.   OR  A list named studentAge stores age of students of a class. Write the Python command to import the required module and (using built-in function) to display the most common age value from the given list. | 2 |
| 22 | **The code for Bubble sort given below has syntactical errors.**  **Rewrite the correct code and underline the corrections made.** | 2 |
| 23 | (a) Differentiate between LAN and WAN.  **OR**  (b) What is a web browser? Write the name of any two commonly used web browsers. | 2 |
| 24 | State one advantage and one disadvantage of using recursion over iteration. | 2 |
| 25 | Mr. Rohith has just created a table named “Employee” containing columns Ename, Department and Salary.  After creating the table, he realized that’s he has forgotten to add a primary key column in the table. Help him in writing an SQL command to add a primary key column EmpId of integer type to the table Employee.  Thereafter, write the command to insert the following record in the table:  EmpId-1001  Ename- Raakesh  Department: Accounts  Salary:25000  **OR**  Zack is working in a database named SPORT, in which he has created a table named “Sports” containing columns SportId, SportName, no\_of\_players, and category.  After creating the table , he realized that the attribute, category has to be deleted from the table and a new attribute Type Sport of data type string has to be added. This attribute Type Sport cannot be left blank. Help Zack write the commands to complete both the tasks. | 2 |

|  |  |  |
| --- | --- | --- |
|  | **SECTION C** |  |
| 26 | **Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Placement given below:**     |  |  | | --- | --- | | (i) |  | | (ii) |  | | (iii) |  | | 3 |
| 27 | (a) Write a function shortest\_line() that accepts a filename and reports the shortest line.  (b) Write a function check\_digit() that accepts two filenames, and copies all lines that do not contain a digit from the first file into the second. | 3 |

|  |  |  |
| --- | --- | --- |
| 28 | **Write SQL qureries for (i) to (iii)**  important-questions-for-class-12-computer-science-python-structured-query-language-9  Note:  NO is Driver Number  KM is Kilometer travelled  NOP is number of travellers travelled in vehicle  TDATE is Trip Date   1. To display NO, NAME, TDATE from the table TRIP in descending order of NO. 2. To display the NAME of the drivers from the table TRIP who are traveling by transport vehicle with code 101 or 103. 3. To display the NO and NAME of those drivers from the table TRIP who travelled between ‘2015-02-10’ and ‘2015-04-01’. | 3 |
| 29 | Write a function string\_compare() that uses a function which takes two  string arguments and returns the string comparison result of the two passed strings. | 3 |
| 30 | 1. Write a program to implement a stack for the author details.   Implement Push, Pop operations and display the count & contents of the stack.  For example: If the list contains the following data:  author\_list = ["Bimal Jalal" ,"Ruskin Bond", "Vinit Karnik”, "Preeti Shenoy"]  To push the author "Rasheed Kidwai", use push("Rasheed Kidwai") and then the stack should display ["Bimal Jalal" ,"Ruskin Bond", "Vinit Karnik”, "Preeti Shenoy","Rasheed Kidwai"]  To remove the author "Rasheed Kidwai", use push("Rasheed Kidwai") and then the stack should display = ["Bimal Jalal" ,"Ruskin Bond", "Vinit Karnik”, "Preeti Shenoy"]   1. Write a function linear\_search(), which takes a list of elements and the key to be searched as input and returns either the key position of the element in the list or display that the key is not present in the list. | 3 |
|  | **SECTION-D** |  |
| 31 | Write a Program in Python that defines and calls the following user defined functions:  a) add() – To accept and add data of an employee to a CSV file ‘furdata.csv’. Each record consists of a list with field elements as fid, fname and fprice to store furniture id, furniture name and furniture price respectively.  b) search()- To display the records of the furniture whose price is more than 10000. | 4 |
| 32 | A school library is connecting computers in its units in a LAN. The library has 3 units as shown in the diagram shown below:    The three units are providing the following services:  1. Teacher's unit: For access of the library books by the teacher  2. Student's unit: For access of the library books by the students  3. Circulation unit: For issue and return of books for teachers and students.  Centre to Centre distance between the 3 units are as follows:   |  |  | | --- | --- | | Circulation unit to Teacher's unit | 20 meters | | Circulation unit to Student's unit | 30 meters | | Teacher's unit to Student's unit | 10 meters |   Number of computers in each of the 3 units:   |  |  | | --- | --- | | Circulation unit | 15 | | Teacher's unit | 10 | | Student's unit | 10 |  1. Suggest the most suitable place (i.e., the unit name) to install the server of the library with a good reason. 2. Suggest an ideal layout for connecting these units for a wired connectivity. 3. Which device will you suggest to be installed and where should it be placed to provide Internet Connectivity to all the units? 4. Suggest the type of the most efficient and economical wired medium for connecting all the computers in the network. 5. The university is planning to connect the Library with the School Principal’s computer which is in his office at a distance of 50 meters. Which type of network out of LAN, WAN, or MAN will be used for the network. Justify your answer. |  |
|  | **SECTION-E** |  |
| 33 | (a) What is the advantage of opening a file using with clause?  Write a program that defines and calls the following user defined functions:   * 1. ADD(): To accept and add data of an employee to a CSV file, ‘employee.csv’. Each record consists of a list with field elements such as empid, name, salary to store employee id, employee name and employee salary respectively.   2. COUNTR(): To count the number of records in the CSV file named ‘employee.csv’.   3. DISPLAY(): To list the employees whose salary is above 50000 in the CSV file named ‘employee.csv’.   **OR**  (b) What is the function of csv.writer object?  Write a program in Python that defines and calls the following user defined functions:  (i) ADD\_STUDENT(): Takes the details of the students and adds them to a csv file 'Students.csv'. Each record consists of a list with field elements such as student\_id, S\_name, S\_class to store student ID, student name and Class respectively.  (ii) SEARCH\_STUDENT(): Takes Class as input and counts and displays the students in the Class. | 5 |
| 34 | 1. Differentiate between Text file and Binary file. 2. Write a python program to create a dictionary containing names of the employees as keys and their salary as values by accepting input from the user. Print the dictionary created.   **OR**   1. Write statements to place the file handle f1: 2. to beginning of file 3. to 26th byte from the beginning 4. to 10 byte behind the current position of the file pointer 5. to 25 bytes behind the EOF position 6. Consider the following Binary file “emp\_sal.dat”, write a function RECSHOW () to display only those records who are earning more than 7000.   **EMPNAME EMPSALARY**  AMAN 5000  BIPIN 9000  DINKAR 9900 | 5 |
| 35 | The school has asked their IT Manager Ms. Deepa to maintain the data of all the sports performance in a table **SPORTS\_PERFORMANCE**.  Ms. Deepa has created a table and entered data of 5 sports.   |  |  |  |  | | --- | --- | --- | --- | | **SPORTSID** | **SPORT** | **COMPETITIONS** | **PRIZES\_WON** | | S01 | TENNIS | 15 | 2 | | S02 | CRICKET | 12 | 4 | | S03 | FOOTBALL | 6 | 3 | | S04 | CHESS | 24 | 12 | | S05 | BADMINTON | 12 | 10 |   Based on the data given above answer the following questions:   1. Identify the column which can be considered as Primary key. 2. Write the degree and cardinality of the table 3. Write the statement to:    1. Insert a new row with the data ('S06','VOLLEYBALL',8, 2)    2. Increase the prizes\_won for FOOTBALL sport to 4.   **OR**  (Option for part (iii) only)  (iii) Write statements to:  a. Add a NOT NULL constraint to the column SPORT in the  table SPORTS\_PERFORMANCE.  b. View the structure of the table, SPORTS\_PERFORMANCE. | 5 |