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**PB-T2/EEE-CSQP/1221/A 17-MAR-2022**

**EEE CONSORTIUM**

**PREBOARD EXAMINATION 2021-2022**

**COMPUTER SCIENCE (083) Set-II**

Maximum Marks :35 Time allowed : 2 hours

*General Instructions:*

The question paper is divided into 3 sections – A, B and C.

Section A, consists of 7 question(1-7). Each carries 2 marks.

Section B, consists of 3 question(8-10). Each carries 3 marks.

Section C, consists of 3 question(11-13). Each carries 4 marks.

Internal choices have been given for question numbers 7,8 and 12.

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|  |  | **SECTION – A**  **Each question carries 2 marks** | Marks |
| Q.No. |  | **Q U E S T I O N** |  |
|  |  | What is stack? What basic operations can be performed on them? | [2] |
|  | (i) | Name any two switching techniques. | [1] |
|  | (ii) | Expand the following :  a) MAC  b) VOIP | [1] |
|  |  | Differentiate between where and having clause in MySQL? | [2] |
|  |  | A resultset is extracted from the database using the cursor object (that has been already created) by giving the following statement.  Datacur=cursor.fetchall()  i) Write a statement to display the count of records present in Datacur.  ii) Which function is used to fetch only the first 3 records of the Datacur. | [2] |
| 5. |  | Write the output of the queries (a) to (d) based on the table, Trip given below:     1. SELECT SUM(NOP) FROM TRIP WHERE KM>100; 2. SELECT MAX(TFATE) FROM TRIP; 3. SELECT \* FROM TRIP WHERE TCODE<103 AND NAME LIKE "R%"; 4. SELECT TDATE FROM TRIP WHERE NOP IN (2,32,25); | [2] |
| 6. | (i) | Write an SQL statement to show all databases available in RDBMS. | [1] |
|  | (ii) | Differentiate between char(n) and varchar(n). | [1] |
| 7. |  | Observe the table given below and answer the questions:     1. Identify the Primary key and Candidate key of this table 2. What will be the datatype of attribute Class.?   **OR**  Table: HRDATA     1. State the degree and cardinality of the table HRDATA 2. Which attribute can be made the primary key of the table. | [2] |
|  |  | **SECTION – B**  **Each question carries 3 marks** |  |
| 8. |  | A company having dictionary of various Departments and Number of computers (PC) available as key value pairs. Write a program, with separate user defined functions to perform the following operations:   * Push the keys (name of the Department) of the dictionary into a stack, where the corresponding value (Number of PC) is 25 or more. * Pop and display the content of the stack. For example:   If the sample content of the dictionary is as follows:  SETUP={"HR":10, "QUALITY":25, "SUPPORT":50, "PRODUCTION":20, "SUPPLY":25, }  The output from the program should be:  QUALITY SUPPORT SUPPLY  **OR**  Raghav has created a vocabulary list. You need to help him create a program with separate user defined functions to perform the following operations based on this list.   * Traverse the content of the list and push the entries having less than 7 charecters into a stack. * Pop and display the content of the stack.   For Example: If the sample Content of the list is as follows:  W=[‘Elucidate’, ‘Haughty’, ‘Pacify’, ‘Quip’, ‘Rapport’, ‘Urbane’, ‘Young’,‘Zenith’] Sample Output of the code should be:  Pacify,Quip,Urbane,Young,Zenith | [3] |
| 9. | (i) | Write a query to display the name of employee whose name contains 'M' as first alphabet 'L' as third alphabet. | [1] |
|  | (ii) | Explain DDL and DML with example. | [2] |
| 10. |  | Kanha has to create a database named ‘Airstation’. He now needs to create a table Flight in the database to store the details of flights. The table “Flight” has following structure:    Help him to complete the task by suggesting appropriate SQL commands. | [3] |
|  |  | **SECTION – C**  **Each question carries 4 marks** |  |
| 11. |  | Consider the following tables Product and Client. Write SQL commands for the statements (i) to (iv) .  **TABLE: Product**    **TABLE: Client**     1. To display the details of those clients whose city is Delhi. 2. To display the details of Products whose price is in the range of 50 to 100 (Both values included) 3. To display the ClientName, City from table Client, and ProductName and Price from table Products with their corresponding matching P\_ID. 4. To increase the Price of all Products by 10. | [4] |
| 12. | (i) | Differentiate between POP and SMTP protocols  **OR**  Define the terms   1. Interspace 2. Bandwidth | [2] |
|  | (ii) | Differentiate between bus and star topology. Illustrate the same with diagrams. | [2] |
| 13. |  | Kalpavriksha Public School, Bangluru is Setting up the network between its different Wings of school campus. There are 4 wings named as SENIOR(S), JUNIOR(J), ADMIN(A) and HOSTEL(H).      Number of Computers installed at various wings are as follows:     1. Suggest the best wired medium and draw the cable layout to efficiently connect various wings of Kalpavriksha PublicSchool, Bangluru. 2. Name the most suitable wing where the Server should be installed. Justify your answer. 3. Suggest a device/software and its placement that would provide data security for the entire network of the School. 4. Suggest a device and the protocol that shall be needed to provide wireless Internet access to all smartphone/laptop users in the campus of Kalpavriksha Public School, Bangluru. | [4] |

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