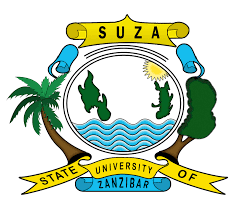
**STATE UNIVERSITY OF ZANZIBAR (SUZA)**



SCHOOL OF COMPUTING, COMMUNICATION AND MEDIA (SCCM)

DEPARTMENT OF COMPUTER SCIENCE AND IT

CLASS ACTIVITY - 24/01/2023

|  |
| --- |
| **INSTRUCTIONS TO STUDENT** |

1. Read Carefully, the previous Examination for INF 2112.
2. Use this time to solve the Examination
3. Which question(s) have you found difficult?
4. What do you feel about this paper?
5. Write a small paragraph, writing your reflection on the questions set on the Examination.
6. Submit your work by 27th January, 2023

**SECTION A (24 marks)**

**Answer all questions**

|  |  |  |
| --- | --- | --- |
|  | Multiple Choice Question: Choose the most correct answer: **[0.5 mark each]**   1. A \_\_\_\_\_\_\_\_\_\_ is a special kind of a stored procedure that executes in response to certain actions on the table like insertion, deletion or updation of data.   A. Procedures  B. Triggers  C. Functions  D. None of the mentioned   1. Management Studio is \_\_\_\_\_\_\_\_ used for development of SQL Server databases. 2. Front end tool 3. Back end tool 4. Database engine 5. SQL Server 6. Which of the following statements is true?    1. Views could be looked as an additional layer on the table which enables us to protect intricate or sensitive data based upon our needs    2. Views are virtual tables that are compiled at run time    3. Creating views can improve query response time    4. All of the Mentioned 7. What is the meaning of LIKE ‘%0%0%’?    1. Feature begins with two 0’s    2. Feature ends with two 0’s    3. Feature has more than two 0’s    4. Feature has two 0’s in it, at any position 8. Which of the following constraints does not enforce uniqueness?    1. UNIQUE    2. Primary key    3. Foreign key    4. None of the mentioned 9. Which of the following databases cannot be dropped?    1. TEMPDB    2. Master    3. MSDB    4. All of the mentioned |  |
|  | 1. Briefly explain how to connect to an SQL Server. What is the information required? | **[4 marks]** |
| 1. What is T-SQL? How is it different from SQL? | **[2 marks]** |
| 1. Mention any two ways that T-SQL statements can be written and submitted to the Database engine. | **[1 mark]** |
|  | 1. List out four advantages of having more than one SQL Server instance running on a single machine. | **[4 marks]** |
| 3. | Assume another person has created a  **student** table with the structure  student(ID,firstname,lastname,email,city\_id,salary)  Write queries to answer the questions: |  |
|  | 1. Add a new column gender in the table. | **[2 marks]** |
|  | 1. Delete last name column from the table. | **[2 marks]** |
|  | 1. Allow the gender column to only accept two values: Male and Female. | **[3 marks]** |
|  | 1. Populate the data from **student** table to another existing table **registeredStudent** with the following schema:   registeredStudent (ID, firstname, email, salary) | **[3 marks]** |

**SECTION B (36 marks)**

***Answer any THREE* *questions, each question carries 12 marks.***

|  |  |  |
| --- | --- | --- |
| 4. | 1. What is the main difference between a view and a user-defined function in MS SQL Server? | **[2 marks]** |
|  | 1. Consider the database schema below:   city(id, city\_name)  program(prog\_id, programName, Description)  student(student\_id, firstname,lastname, city\_id, program\_id)  Use T-SQL to create a view vWStudentDetails that stores students first name, last name, program name and the name of the city that the student is coming from. | **[4 marks]** |
|  | 1. Write a query to display the number of students in each city, grouped by city names. | **[3 marks]** |
|  | 1. Create a view to display the student full name and the program from which the student is admitted, ordered by programs. | **[3 marks]** |
|  |  |  |
| 5. | 1. What is the difference between a stored procedure and a function in MS SQL Server? | **[2 marks]** |
|  | 1. Create a stored procedure called spCountries1 to list out all the countries with ContinentId equal to 1, in alphabetical order | **[4 marks]** |
|  | 1. Modify the procedure which modifies the above one,to list out the CountryId as well. | **[2 marks]** |
|  | 1. Create a function called myAge that accepts DateofBirth and returns Age of the person. Use the function to display the firstname,lastname,DateofBirth and Age of student in a student table with a schema:   student(firstname, lastname,DOB) | **[4 marks]** |
|  |  |  |
| 6. | 1. What do you understand by the term transaction in T-SQL? | **[2 marks]** |
|  | 1. Write a **transaction** which executes an insert statement to add a new event with EventName called My DOB , with your date of birth as the Eventdate column and an appropriate entry for the EventDetails column.   The transaction should test if an Eventname of **My DOB** exists already, adding it if it doesn't and giving a message if it does as shown in Fig. 6(a) and Fig. 6(b):    Fig. 6(a):Adding an event    Fig. 6(b): Result if the event is already added | **[4 marks]** |
|  | 1. The snapshot of the tblCountry is as shown:     Use an UPDATE statement on the tblCountry table to set the CountryName column to include the words (My Country) next to the country you call home (i.e. Tanzania) | **[2 marks]** |
|  | 1. Write a transaction that add (Holiday Destination) to all other countries after running the update statement which:    1. rolls back the transaction if 1 + 1 = 2 (it does); or    2. commit it otherwise. | **[4 marks]** |
|  |  |  |
| 7. | 1. What are DML triggers? | **[1 mark]** |
|  |  |  |
|  | 1. Briefly explain the difference between AFTER triggers and instead of triggers. | **[2 marks]** |
|  |  |  |
|  | 1. Consider the structure of the students table and AuditTable below:   Student(ID, firstname, lastname, email, city\_id, salary, gender)  StudentAudit(id, AuditInfo) |  |
|  | As a DBA, you are required to use DML triggers to create a simple Auditing Information to let you understand when the data in the table student has been inserted or deleted.  The output of the StudentAudit table should look similar to the one below: | **[6 marks]** |
|  | 1. Write a trigger that prevents the salary of the student to be updated, if the updated value is less than the existing value in the table.   The output should look like this one, when the user performs an update that results in the decrease of the existing salary. | **[3 marks]** |
|  |  |  |
| 8. | 1. Briefly explain any four types of SQL Server Backups. | **[4 marks]** |
|  | 1. Create an SQL Authenticated server Login “Instructor’. The password has to be changed when it is first used. Create a user associated with this login. | **[2 marks]** |
|  | 1. Allow the user to view the data on the customer table and be able to allow another user to view the same. | **[2 marks]** |
|  | 1. Briefly explain any two fixed database roles. | **[2 marks]** |
|  | 1. Differentiate between Logins and Users as used in MS SQL Server. | **[2 marks]** |