SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

Higher National Diploma in Information Technology
Second Year, Second Semester Examination – 2015
HNDIT 2424 - Database Administration

Instructions for Candidates:	No. of questions : 06
Answer five (05) questions.	No. of pages : 04
All questions carry equal marks.	Time : 3 hours

01   **(Total 20 marks)**

"SQL Server 2008 can be more accurately described as an Enterprise Data Platform. It builds on many of the features that had first been incorporated in SQL Server 2005, while also expanding its offerings to include several improvements and additions."

i.   Imagine you are a SQL Server database administrator for a newly established IT Company. You are asked to establish a new SQL Server instance for the company. List four (04) main considerations that you need to undertake before you install the server.

(04 Marks)

ii.   What are the key objects of SQL Server 2008 database? Briefly describe each.

(08 Marks)

iii.   "There are three database types in SQL Server 2008 as system database, user database and distribution database."
How many system database types are there in SQL Server 2008? Briefly describe three (03) of them.   (08 Marks)

02 **(Total 20 marks)**

Following image is a screenshot captured from the default SQL Server 2008 installation center.
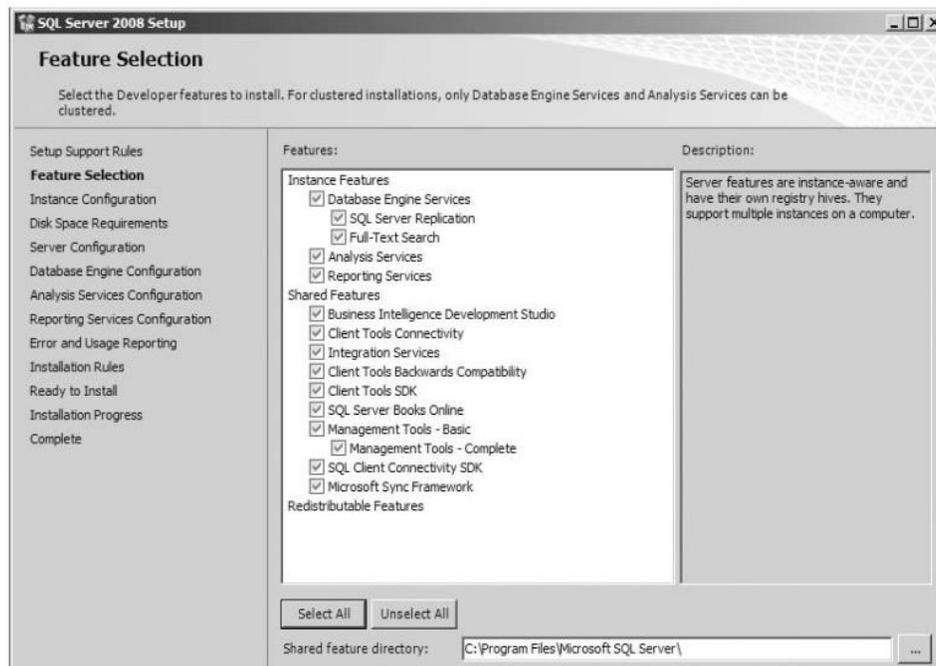
i.   What is the importance of opting for install "Management Tools" for this instance?

(03 Marks)

ii.   The Relational Database Engine in SQL Server 2008 has many improvements to support scalability, availability, security, and programmability. Briefly describe following new features introduced in SQL Server 2008.

        a. Hot Add CPU

        b. Resource Governor

        c. Spatial Data Types

        d. FileStream   (08 Marks)

iii. SQL Server Integration Services and Analysis Services are playing a major role when it comes to Business Intelligence activities. Briefly describe the three (03) main activities of SQL Server Integration Service (SSIS).   (09 Marks)

HNDIT 2 Database Administration 2015

03 **(Total 20 marks)**

   i.   Write example SQL queries for the following constraint types.

            a. Primary Key Constraints
            b. Foreign Key Constraints   (04 Marks)

   ii. Write example SQL queries for the following cascading options.

            a. ON DELETE CASCADE
            b. ON UPDATE CASCADE
            c. ON DELETE SET NULL
            d. ON UPDATE SET NULL   (08 Marks)

   iii.

            a. What is a stored procedure?   (02 Marks)
            b. "Triggers are stored Transact-SQL or managed-code objects that are executed
               because of some other action within the system and cannot be executed directly."
               Briefly explain the two types of triggers in SQL Server 2008.   (06 Marks)

04 **(Total 20 marks)**

   i.   List the authentication modes in SQL Server 2008.   (02 Marks)

   ii. What is a principal in SQL Server 2008?   (03 Marks)

   iii. How many levels are there to define principals in SQL Server 2008? Name them.

                                                                    (03 Marks)

        "Microsoft SQL Server 2008 offers two kinds of logins for authentication. They are
        Windows logins and SQL logins."

   iv. Briefly describe the workflow for Windows operating system for creating a user.

                                                                    (06 Marks)

   v.   How to create a login using Transact - SQL statement? Give an example.   (06 Marks)

05   **(Total 20 marks)**

    i.   Distinguish symmetric key encryption from asymmetric key encryption.   (06 Marks)

   ii.   What is the encryption hierarchy in SQL Server 2008? Briefly describe using a diagram.

                                                                                              (06 Marks)

  iii.   How to create a Master key for **ATIDB** database? Provide the SQL statement.

                                                                                               (02 Marks)

   iv.   Briefly explain three (03) best practices for enforcing the security of a server product like SQL Server 2008.   (06 Marks)

06   **(Total 20 marks)**

    i.   What is a database backup?   (02 Marks)

   ii.   Briefly describe three database backup types.   (09 Marks)

  iii.   Write the SQL statements for taking backups for disk destinations identified by a physical and Universal Naming Convention (UNC) for the database **ATIDB.**

                                                                                               (03 Marks)

   iv.   Write short notes on following backup strategies.   (06 Marks)

        a.   Full Backup Only
        b.   Full Backup with Transaction Log

4