- Name: _____

- Date: _____

- Section: _____

BUSN 315: Management Information Systems

Problem Set #3

Spring 2026

Problem 1. Definitions

Select <u>FOUR</u> items from the list below, and provide a definition for each item you choose.

- Database Management System
- Client/Server Architecture
- Virtualization

- Data Mart
- Sentiment Analysis
- Data Inconsistency

1.A. Item #1: _____

1.B. Item #2: _____

1.C. Item #3: _____

1.D. Item #4: _____

Problem 2. True / False

Determine whether each statement is TRUE or FALSE. If FALSE, justify your answer briefly.

2.A. Modern IT infrastructure refers only to physical hardware such as servers, storage devices, and networking equipment used by a firm.

2.B. Bring Your Own Device (BYOD) policies can improve employee productivity and flexibility but may introduce additional security risks for organizations.

2.C. Under the Software as a Service (SaaS) model, users access fully managed applications through the Internet rather than installing them locally.

2.D. In a relational database, each table typically stores information about a single entity and organizes that information into rows and columns.

Problem 3. Multiple Choice

Select the BEST answer for each question.

3.A. IT infrastructure refers to:

    a) The physical office space where IT staff work

    b) The shared technology resources that support a firm's information systems

    c) Only the hardware used by employees to access company networks

    d) The collection of software applications purchased by a firm

3.B. Which of the following best describes virtualization?

    a) Converting analog data into digital data

    b) Connecting multiple organizations to a shared network

    c) Using cloud storage instead of local storage

    d) Running multiple logical machines on a single physical computer

3.C. The consumerization of IT refers to:

    a) Employees bringing consumer technologies into the workplace

    b) Firms restricting employee use of consumer technologies

    c) Companies selling IT services directly to consumers

    d) Firms replacing enterprise software with entertainment applications

3.D. A Bring Your Own Device (BYOD) policy allows employees to:

    a) Use only company-issued devices for work

    b) Share corporate devices with customers

    c) Store company data only on office servers

    d) Use personal devices to access company systems

Problem 3. Multiple Choice (continued)

3.E. A database management system (DBMS) is best described as:

    a) Hardware used to store digital files

    b) Software that manages and organizes data within databases

    c) A spreadsheet used for financial reporting

    d) A programming language used for building applications

3.F. A company replaces many separate departmental data files with a centralized database management system. The primary advantage of this change is that it:

    a) Improves data sharing and consistency across departments

    b) Eliminates the need for data analysis

    c) Prevents users from accessing the data

    d) Removes the need for software applications

3.G. Which of the following best describes data inconsistency?

    a) Different versions of the same data appear in different systems

    b) Data stored in encrypted format

    c) Data stored in multiple tables within a database

    d) Data stored in cloud storage

3.H. In a relational database, a primary key is used to:

    a) Connect databases to the Internet

    b) Store backup copies of data

    c) Encrypt sensitive information

    d) Uniquely identify each record in a table

Problem 4. Short Answers #1

A mid-sized accounting firm maintains a small data center with many physical servers. Over time, the firm noticed that most of its servers use only a small fraction of their computing capacity. For example, one server runs the company's internal email system, while another runs accounting software, and another runs file storage. The firm's IT manager proposes consolidating these systems so that several operating systems and applications can run on the same physical server.

  4.A. What technology would allow multiple operating systems to run on a single physical server?

  4.B. Briefly explain one advantage this technology provides for the organization.

Problem 5. Short Answers #2

A small online bookstore maintains the following two database tables.

CUSTOMERS   **ORDERS**

- Customer_ID   - Order_ID

- Name   - Order_Date

- Email   - Order_Amount

- Address   - Customer_ID

Each order record contains the Customer_ID associated with the customer who placed the order. This allows the company to connect orders with the correct customer.

5.A. Identify the role of Customer_ID in each table.

5.B. Suppose a customer changes their email address. Explain why storing customer information in a separate **CUSTOMERS** table (instead of repeating it in every order record) is beneficial for the company.