**Course Title:** SOFTWRE DEVELOPMENT LIFE CYCLE

**Assignment # 01**

**Waterfall Model vs. Incremental Model of Software Development**

**Instructions:**

1. This assignment consists of descriptive and analytical tasks. Your responses should be detailed, well-structured, and demonstrate a clear understanding of the concepts.
2. Support your answers with examples, diagrams (if applicable), and proper justifications.
3. Ensure your work is plagiarism-free and properly referenced if you use external sources.
4. Submit your assignment by [28-11-2024].

**Question:01**

1. **Introduction to Software Development Models** 
   * Briefly describe the purpose and importance of software development models in project management.
   * Explain how different models can impact the success of software projects.
2. **Waterfall Model** 
   * Describe the key characteristics and structure of the Waterfall Model of software development.
   * Outline the advantages of using the Waterfall Model.
   * Identify and explain the disadvantages or limitations associated with the Waterfall Model.
3. **Incremental Model** 
   * Describe the key characteristics and structure of the Incremental Model of software development.
   * Outline the advantages of using the Incremental Model.
   * Identify and explain the disadvantages or limitations associated with the Incremental Model.
4. **Comparison and Contrast** 
   * Compare the Waterfall Model and the Incremental Model, highlighting their key differences in terms of project scope, flexibility, development approach, and risk management.

**Question:02**

Comparative Analysis of Software Development Models

**Instructions:**

1. **Key Characteristics** 
   * Select **at least three** software development models from the following list:
     + Waterfall Model
     + Agile Model
     + V-Model
     + Spiral Model
     + Iterative Model
   * For each chosen model, explain its key characteristics. Focus on aspects such as process structure, feedback mechanisms, adaptability, and iteration.
2. **Phases of Each Model** 
   * Outline the phases of each selected model. Provide a step-by-step breakdown and describe what happens during each phase.
   * **Illustrate** with diagrams where appropriate (e.g., flowcharts, phase cycle charts).
3. **Advantages and Limitations** 
   * List the advantages and limitations of each model. Provide **at least three** advantages and limitations per model. Consider aspects like cost, speed, risk management, suitability for complex projects, and client involvement.
4. **Scenario-Based Analysis** 
   * Choose **two** of the models you analyzed.
   * Discuss **real-world scenarios** or types of projects where one model may be preferred over the other. For example, when would Agile be more beneficial than the Waterfall Model, and why?
   * Include factors such as project size, requirements volatility, client feedback availability, risk management needs, etc.

**Bonus (5 Marks)**:

* Use a **case study or personal project** example to illustrate the effectiveness of one of the models in action.