**Multiple Choice [5 Marks]**

Circle the best answer from the choices for each question below:

1. Which of the following steps is not part of the Software Design Lifecycle?
2. Planning
3. Design
4. Testing
5. Marketing
6. What is the main purpose of the Analysis phase of the Software Design Lifecycle?
7. Create test cases to identify “bugs” in the program
8. Collect user feedback about the operation of the program
9. Design interfaces and split the project into programming tasks
10. Collect requirements and other information about the project
11. In which phase of the Software Design Lifecycle would you identify new skills that would be needed for tour team members?
12. Planning
13. Design
14. Implementation
15. Maintenance

**Day 1 Task – Object Oriented Programming [10 Marks]**

1. Write a Java class that implements a standard mathematical function and that demonstrates some principles of object-oriented programming. Your program should do the following:
   1. Implement a simple mathematical sequence function (e.g. Factorial function).
   2. Provide a constructor that initializes the class.
   3. Define and use one or more private variables.
   4. Provide a method to calculate the sequence function.
   5. Provide “getter” methods to return the values of the private variables.
   6. Bonus: Demonstrate the property of inheritance.
   7. Note: Your code ***does not have to*** implement a main program that reads and writes data to the standard output.
   8. Provide a written version of your code below.

**Day 1 – SDLC Reflection [10 Marks]**

Note: Each question is worth 5 marks. 2x5marks = 10 marks.

1. Reflect on the Planning and Analysis Phase of the Software Development Life Cycle.
   1. List three (3) important activities / objectives of this phase.
   2. Specifically identify how you or your team implemented these activities in one of the software projects we did this semester.
2. Reflect on the Design Phase of the Software Development Life Cycle.
   1. Explain how the Design Phase is different from the Planning & Analysis Phase.
   2. Explain how the Design Phase is different from the Implementation & Coding Phase.
   3. Specifically identify two (2) things you or your team did for the design phase related to one of the software projects we did this semester.

**Day 1 – Short Answer Questions [8 Marks]**

Note: Each question is worth 4 marks. 2x4marks = 8 marks.

1. Provide and explain one (1) example of how computer technology has caused a negative impact on the environment and one (1) example of how computer technology has caused a positive impact on the environment.
2. Provide and explain two (2) examples of how computer technology or artificial intelligence will change traditional careers / jobs in the future.

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