The estimated time for each part is indicated by E.T.

Question One :MCQ Write the letter of the most correct answer [E.T. =30][30 marks]

**Part A: Lecture 1:**

1. What are SQFs?

|  |  |
| --- | --- |
| 1. Software Quality Factors | 1. Software Quick Fixes |
| 1. Software Quantitative Feedbacks | 1. Software Quirks and Faults |

1. What are the three general types of requirements that affect SQFs?

|  |  |
| --- | --- |
| 1. Product execution requirements, product modification requirements, product testing requirements | 1. Product operation requirements, product revision requirements, product transition requirements |
| 1. Product development requirements, product maintenance requirements, product deployment requirements | 1. Product integration requirements, product customization requirements, product validation requirements |

1. Which requirement refers to how the product will be changed?

|  |  |
| --- | --- |
| 1. Product operation requirements | 1. Product revision requirements |
| 1. Product transition requirements | 1. Product improvement requirements |

1. Integrity is affected by …………….. .

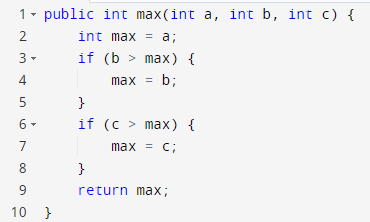
|  |  |
| --- | --- |
| 1. Product operation requirements | 1. Product revision requirements |
| 1. Product transition requirements | 1. Product improvement requirements |

1. What is a security attack?

|  |  |
| --- | --- |
| 1. The likelihood that an attack will be repelled | 1. The likelihood that an attack will occur within a given time |
| 1. The severity of the attack | 1. The type of attack that is most likely to occur |

**Part B: Lecture 2:**

1. What is the cyclomatic complexity in this snippet ?



|  |  |
| --- | --- |
| 1. 1 | 1. 3 |
| 1. 2 | 1. 4 |

1. What is the cyclomatic complexity in this snippet ?

Text

Description automatically generated

|  |  |
| --- | --- |
| 1. 6 | 1. 8 |
| 1. 10 | 1. 12 |

Diagram

Description automatically generated

1. What is the DIT for the previous class diagram ?

|  |  |
| --- | --- |
| 1. 5 | 1. 3 |
| 1. 4 | 1. 2 |

1. What are the NOC for class C2 in the previous class diagram ?

|  |  |
| --- | --- |
| 1. 5 | 1. 3 |
| 1. 4 | 1. 2 |

1. Which of the following is a characteristic of black box testing?

|  |  |
| --- | --- |
| 1. It is based on knowledge of the internal structure of the software system. | 1. It is also known as structural testing. |
| 1. It is a white box testing technique. | 1. It focuses on the inputs and outputs of the software system. |

1. Which of the following is a white box testing technique?

|  |  |
| --- | --- |
| 1. Boundary value analysis | 1. Equivalence partitioning |
| 1. Statement coverage | 1. Error guessing |

**Part C: Lecture 3:**

1. What is an advantage of the Layers pattern in software architecture?

|  |  |
| --- | --- |
| 1. High coupling between layers | 1. Limited reusability of general services |
| 1. Separation of concerns between different groups of functionalities | 1. Lack of flexibility in making changes to the system |

1. Which layer of a software system typically contains the model in the Model-View-Controller (MVC) pattern?

|  |  |
| --- | --- |
| 1. Presentation layer | 1. Data access layer |
| 1. Business layer | 1. Application layer |

1. What are some advantages of using the Model-View-Controller (MVC) pattern?

|  |  |
| --- | --- |
| 1. Increased performance and reduced memory usage | 1. Separation of concerns, ease of testing, and maintainability |
| 1. Greater flexibility and scalability | 1. Improved security and data integrity |

1. What is a service in the context of Service-oriented architectures (SOA)?

|  |  |
| --- | --- |
| 1. An application that cannot be reused | 1. A component of the business process that cannot be discovered |
| 1. An application function packaged as a reusable component | 1. A consumer who does not need to know about the service or where it is located |

1. What is a Web service?

|  |  |
| --- | --- |
| 1. A software module designed to support human-to-machine interaction over a network | 1. A programming language used for machine-to-machine communication |
| 1. A tool for designing web pages | 1. A software module designed to support interoperable machine-to-machine interaction over a network with a programming interface |

**Part D: Lecture 4:**

1. What is the role of the registry in a Service-oriented architecture (SOA)?

|  |  |
| --- | --- |
| 1. To implement the service | 1. To call the service provider |
| 1. To define the service contract | 1. To allow the lookup of services, service providers, and their location |

1. Which of the following statements is true regarding XML and JSON?

|  |  |
| --- | --- |
| 1. XML and JSON are both used to store and transmit data, but XML is more commonly used in web development. | 1. JSON is a text format based on a subset of the JavaScript language, while XML is a markup language that uses tags to define elements. |
| 1. XML is more efficient than JSON because it allows for greater compression of data. | 1. JSON is primarily used for styling web pages and making them visually appealing. |

1. Which of the following is true about creating a basic Flask application?

|  |  |
| --- | --- |
| 1. We don't need to import the Flask class. | 1. We don't need to create an instance of the Flask application. |
| 1. The first argument of Flask instance is the URL that triggers our function. | 1. The route() decorator is used to define the message we want to display in the user's browser. |

1. Which of the following is true about the differences between XML and JSON?

|  |  |
| --- | --- |
| 1. XML is primarily used for data exchange, while JSON is used for configuration files. | 1. XML requires more characters to represent the same data as compared to JSON. |
| 1. JSON is more human-readable and compact as compared to XML. | 1. XML is a subset of JSON. |

1. Which of the following represents the data structure in the JSON code snippet?

{

"Name": "crunchify.com",

"Author": "App Shah",

"Company List": [

"Compnay: eBay",

"Compnay: Paypal",

"Compnay: Google"

]

}

|  |  |
| --- | --- |
| 1. A list of companies, each represented as a dictionary with keys "Compnay" and the company name. | 1. A dictionary with three keys: "Name", "Author", and "Company List". The value of "Company List" is a list of company names. |
| 1. A dictionary with three keys: "firstName", "lastName", and "employees". The value of "employees" is a list of dictionaries, each representing an employee's name. | 1. A list of dictionaries, each representing an employee's name, with keys "firstName" and "lastName". |

|  |  |
| --- | --- |
| Names | IDS |
| Catherine maher | 20196038 |
| Mohamed Kelany | 20196085 |
| Rawan Alshami | 20196097 |
| Mohamed Mourad | 20196104 |