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

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

1. Which of the following is affected by product operation requirement?

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| 1. Correctness | 1. Flexibility |
| 1. Interoperability | 1. Reusability |

1. ….. is a primary SQF

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| 1. Testability | 1. Reusability |
| 1. Portability | 1. Integrity |

1. A web server has been running for a month. From the log ﬁles for that month we see that, of 3000 accesses, 175 attacks were made. Of these, 55 were denial-of-service attacks, of which 20 were successful, 45 were password guessing (of which none were successful), and 75 were input attacks, of which 50 were successful.

Calculate the integrity of the server:

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| 1. 2.96683 | 1. 2.97655 |
| 1. 2.96301 | 1. None of the above |

1. Which testing type tests the completed system against the customer’s requirements?

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| 1. Unit Testing | 1. System Testing |
| 1. Usability Testing | 1. Requirements-Based Testing |

1. Which testing type tests that the system can operate reliably at the limits of each of its resources?

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| 1. Security Testing | 1. Stress Testing |
| 1. Start-up and Initialization Testing | 1. Performance Testing |

1. What is the complexity of the following code? using both LOC and McCabe’s cyclomatic-complexity metrics (LOC, McCabe’s)

int input = 0;

    int count = 0;

    if (input % 2 == 0 && (input != 2 || input != 0)) {

      while (count < 5) {

        count++;

        if (count % 2 == 0) {

          System.out.println("count is even");

          input += 2;

        } else {

          System.out.println("count is odd");

          input += 1;

        }

      }

    } else {

      input /= 2;

      switch (input) {

        case 0:

          System.out.println("input is 0");

          break;

        case 1:

          System.out.println("input is 1");

          break;

        case 2:

          System.out.println("input is 2");

          break;

        case 3:

          System.out.println("input is 3");

          break;

        default:

          System.out.println("input is bigger than 3");

      }

    }

|  |  |
| --- | --- |
| 1. 32, 10 | 1. 28, 10 |
| 1. 32, 8 | 1. 28, 8 |

1. What is the largest number of hops through an object’s superclass?

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| 1. Coupling-between-objects | 1. Depth-of-inheritance-tree |
| 1. Number-of-children | 1. None of the above |

1. Which of these are not added to the cyclomatic-complexity?

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| 1. Loops | 1. The else condition |
| 1. The switch cases | 1. None of the above |

1. Which one of these is a black box testing technique?

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| 1. Statement Coverage. | 1. Loop testing. |
| 1. Partitioning | 1. Path Coverage. |

1. Which of the following views in software architecture is responsible for defining the distribution of the system across different physical or virtual machines?

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| 1. Logical View | 1. Development View |
| 1. Process View | 1. Deployment View |

1. In which of the following scenarios is the Layers pattern most appropriate to use in software architecture?

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| 1. When the system requires a high level of parallelism and concurrency. | 1. When the system has a complex user interface that requires multiple interactions. |
| 1. When the system needs to support multiple data sources with different formats. | 1. When the system needs to separate the business logic from the presentation and data access layers. |

1. Which of the following is the responsibility of the View component in the Model-View-Controller (MVC) pattern?

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| 1. To handle user input and send it to the model component | 1. To represent the user interface and display the model data to the user |
| 1. To perform data validation and processing | 1. To manage the application flow and handle business logic |

1. Which of the following statements best describes the meaning of Service Oriented Architecture (SOA)?

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| --- | --- |
| 1. SOA is a software design pattern that separates the presentation, business logic, and data access layers of an application. | 1. SOA is an approach to build enterprise systems that deliver application functionality either as services to end-user applications or to build other services. |
| 1. SOA is a software development methodology that emphasizes rapid iteration and frequent delivery of small, incremental changes. | 1. SOA is a programming paradigm that emphasizes the use of objects and classes to encapsulate data and behavior. |

1. Which of the following best describes the role of an application service in software architecture?

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| 1. An application service is responsible for processing and storing data in a database. | 1. An application service is responsible for handling user input and updating the user interface. |
| 1. An application service is responsible for performing a specific business operation or task. | 1. An application service is responsible for managing the deployment and scaling of the application. |

1. Which of the following statements best defines a web service in software architecture?

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| --- | --- |
| 1. A web service is a software application that can be accessed over a network using a standard protocol for exchanging data. | 1. A web service is a component that provides a user interface for interacting with a database or other data source. |
| 1. A web service is a programming language feature that allows objects to be passed between different applications. | 1. A web service is a design pattern that separates the presentation, business logic, and data access layers of an application. |

1. What is Flask?

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| 1. A programming language | 1. A web application framework |
| 1. A database management system | 1. An operating system |

1. What does @app.route('/about') do in Flask?

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| 1. Defines a new route for the /about URL | 1. Defines a new function called about |
| 1. Defines a new class called about | 1. Imports the about module |

1. How do you access form data in Flask?

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| 1. Using the request object | 1. Using the flask-forms extension |
| 1. Using the flask-wtf extension | 1. Using the flask-formencode extension |

1. Which Flask extension can you use to connect to a database?

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| --- | --- |
| 1. Flask-Database | 1. Flask-SQLAlchemy |
| 1. Flask-ORM | 1. Flask-MySQL |

1. Which of the following is NOT an element of a Service-Oriented Architecture (SOA)?

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| 1. Services | 1. Service consumers |
| 1. Service registries | 1. Service controllers |