**Final Term Examination-Fall-2023**

**BSSE/BSCS**

**Software Engineering CSC-205**

**Registration No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Total Time: 2 hrs**

**Maximum Points: 30**

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**(5+3 points)**

**Question 01:**

1. An online food ordering mobile app is a smartphone application that allows users to browse through various restaurant menus, place food orders, and make payments. The system involves different components, including a database of restaurants and menus, a payment gateway, and an order processing system. Create a Data Flow Diagram (DFD) up to level 1for this scenario.
2. How does a WBS relate to project management tools like Gantt charts and network diagrams?

**(06 Points)**

**Question 02:**

Read the following set of activities carefully. The precedence of all activities is finish to start. Using PDM, perform the following tasks.

|  |  |  |
| --- | --- | --- |
| **Activity** | **Immediate Predecessor** | **Duration (Months)** |
| **A** | **None** | **2** |
| **B** | **A** | **4** |
| **C** | **A** | **2** |
| **D** | **B** | **2** |
| **E** | **B,C** | **4** |
| **F** | **A,E** | **6** |
| **G** | **D** | **4** |
| **H** | **D,E,F** | **2** |
| **I** | **G,H** | **6** |
| **J** | **H,F** | **6** |
| **K** | **H,I,J** | **4** |

1. What is the project duration?
2. What are the critical activities?
3. Show the critical path on your precedence diagram.
4. When is the latest time that activity G must be completed so that the project is not delayed?
5. When is the earliest time that activity D can be completed?
6. What is the free float and activity span for activity E concerning activity H?

**(5+3 Points)**

**Question 03:**

1. **Complete the given table that describes the Equivalence Class Partitioning and Boundary Value Analysis (BVA) for determining the interest paid on a Vehicle loan described below**

|  |  |  |  |
| --- | --- | --- | --- |
| **New, Used, Refinanced Vehicles** | **Annual Percentage Rate** | **Equivalence classes** | **BVA** |
| Up to 36 months (2009-2012 Only) | as low as 2.250% | ? | ? |
| Up to 36 months | as low as 2.500% | ? | ? |
| 37 to 48 months (2009-2012 Only) | as low as 2.500% | ? | ? |
| 37 to 48 months | as low as 2.750% | ? | ? |
| 49 to 60 months | as low as 3.000% | ? | ? |
| 61 to 72 months | as low as 4.000% | ? | ? |

1. You are a lead developer responsible for a critical module in a software project. Describe the steps you would take to validate the code written by your team members before it is integrated into the main codebase**.**

**Question 04:**

**(06 Points)**

UIITInterflix wants to build a web-based DVD rental business whereby customers interact with the company via the Internet. Customers use a web interface to browse the DVD inventory, ask about the availability of movies, and request to borrow movies (up to 2 movies at a time). The company mails requested DVDs out to the customer, and the customer mails the DVDs back when he is done with them. The rental period is two weeks. There is a fee for renting a movie (movies have different rental fees based on whether they are new releases, whether the movie has won any special awards, etc.). There is a late fee (assessed daily) for not returning a movie before the end of the rental period. When an account&#39’s balance falls below the value MinBal, the account is suspended and the customer cannot initiate new loans until payment is made and the balance becomes nonnegative. Information about both current and past loans is maintained. Design complete Class Diagram using classes, association class, dependency among classes, generalization and multiplicity.