Register Number:……..

KUMARAGURU college of technology
character is life

**B.E/B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2024**

(Regulation 2018)

Fourth Semester

**COMPUTER SCIENCE AND ENGINEERING**

U18CSI4204**:** Software Engineering

**COURSE OUTCOMES**

CO1: Design an application using UML modelling.

CO2: Test the given application with various test case using a testing tool.

CO3: Create an application with all the stages of software engineering lifecycle.

CO4: Apply project management and change management.

**Time: Three Hours** **Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 2 = 20 Marks)**

**(Answer not more than 40 words)**

| | | | |
|---|---|---|---|
| 1. | "Software acts as an Information Transformer"- Interpret the statement. | CO1 | [$K_2$] |
| 2. | "The Waterfall model is suitable for projects with well-defined and stable requirements" – Justify the statement. | CO1 | [$K_3$] |
| 3. | Give how architectural patterns are designed with an example. | CO3 | [$K_2$] |
| 4. | Outline on the Requirements Elicitation. | CO2 | [$K_2$] |
| 5. | Illustrate the process of checking account balance in an ATM with the help of a Use Case diagram. | CO2 | [$K_2$] |
| 6. | In a project organization, as many critical communication events are planned, why is there still a need for unplanned communication? | CO5 | [$K_2$] |
| 7. | "A good system design should have high cohesion and low coupling"- Interpret the statement | CO3 | [$K_2$] |
| 8. | Recall the importance of Unit testing | CO4 | [$K_1$] |
| 9. | "X" tries to find faults in the user interface design because often systems fail to accomplish their intended purpose simply since users are confused by the user interface"-Identify here "X" denotes which type of testing and interpret the same. | CO4 | [$K_2$] |
| 10. | What is meant by project management in Software Engineering? | CO5 | [$K_1$] |

**Answer any FIVE Questions:-**
**PART B (5 x 16 = 80 Marks)**
**(Answer not more than 400 words)**

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|---|---|---|---|---|---|
| 11. | a) | List down the different phases involved in the waterfall model and explain each phase with an example | 8 | CO1 | [$K_2$] |
| | b) | Construct a Use case diagram for booking a cab (Taxi) by including all the necessary functionalities. Assume the booking is done using a Mobile Application. | 8 | CO2 | [$K_3$] |
| 12. | | Imagine you're a customer using our e-commerce platform. You want to purchase multiple items in a single order and apply different discounts to each item. Explain the different activities involved in the process of requirement elicitation and how those activities can be mapped with the above scenario. | 16 | CO2 | [$K_3$] |
| 13. | a) | Explain the importance of Sequence diagram in UML Modelling? | 4 | CO2 | [$K_2$] |
| | b) | "As a student using the university's course registration system (like CAMU enrollment), Imagine all the necessary processes you would follow when registering for courses, adding, or dropping courses, and checking your concern semester. Specifically, describe the steps you would take from the moment you log into the system to when you finalize your course selections and ensure your selection is accurate as per the enrollment guidelines provided".<br>Construct a Class diagram and Sequence Diagram for the above scenario by including all the necessary elements. | 12 | CO2 | [$K_3$] |
| 14. | a) | Explain the four different types of transformations involved in mapping concepts. | 8 | CO4 | [$K_2$] |
| | b) | "Software testing is a systematic process of validating and verifying that a software application or system meets specified requirements, functions as expected, and performs reliably under various conditions"- Cite examples for the statement and interpret the different testing activities involved in software testing | 8 | CO4 | [$K_2$] |
| 15. | a) | Explain the different activities involved in system design with an example | 10 | CO3 | [$K_2$] |
| | b) | Explain the Liskov Substitution Principle of Object design | 6 | CO3 | [$K_2$] |
| 16. | a) | "Configuration management is the discipline of managing and controlling change in the evolution of software systems"-Interpret the above statement and describe six main software configuration management activities with an example | 10 | CO5 | [$K_2$] |
| | b) | "Software Engineering is a Problem-Solving activity"- Interpret the statement with an example | 6 | CO5 | [$K_2$] |

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