



- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER

Answer ALL Questions

(10 X 10 = 100 Marks)

1. Suggest the advantages and work flow of Kruchten iterative approach over traditional waterfall and spiral models for software development.

2. Describe the needs, features and feature attributes for the following **Concert Ticket Booking System**.

"The Concert Ticket Booking System is designed to facilitate the online booking of tickets for various concerts, allowing users to search for events, view available tickets, and purchase them seamlessly. The system should cater to both concert organizers and attendees, providing features that enhance the overall user experience. The attendees can search for concerts, view details, book tickets, and manage their bookings and the organizers can create and manage concerts, track ticket sales, and generate reports.

Users should be able to register and log in to their accounts and search for concerts by date, location, artist, or genre. Users can view details about a concert, including the venue, date, time, ticket pricing, and available seating. Users can select the number of tickets and complete the purchase process securely. The system should integrate with a payment gateway to handle transactions. Users can view their bookings, cancel tickets, and request refunds if applicable. Organizers can create new concert events, manage existing events, view sales reports, and monitor ticket availability."

3. Deploy the five-step problem analysis and identify the solution for the given system which can be considered before the development of the system.

"Consider a media company's website which is available 98% of the time compared to its competitors. Every time the website goes down, a reason is given, such as a failed change, a person making a mistake, data problems, or service failures. The organization conducts a gap analysis to identify the underlying reasons for these failures.

The analysis reveals that the website's infrastructure, platform, development procedures, and code have problems resulting in an unstable environment. For instance, the company hired a company with a high turnover rate to handle its development and web application security management outsourcing.

Each developer only spends an average of two weeks working on the code since the company often moves its personnel around. The platform's developers' lack of familiarity leads to more stinky code and issues."

4. Apply the interviewing template for the Concert Ticket Booking System given in Question No.2.

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5. Discuss the need of requirement workshop and story board the sequence of student attending quiz and error handling involved in the following online quiz system

"The university implements an online quiz system for students to take assessments remotely. Professors can create quizzes, set time limits, and track students' performance. Students can log in, take assigned quizzes, and receive immediate or delayed feedback based on the quiz settings. The students can view available quizzes assigned to them and once the timer starts the quiz begins. Questions are presented either all at once or one at a time (based on settings). Auto-submission occurs if the timer expires. Students can view their scores and compare with class averages (if enabled). Professors access detailed reports, including individual and overall performance analytics if a student loses connection during the quiz, the system saves progress up to the disconnection point.

The student can resume the quiz if the allowed time hasn't expired. Randomized question order and IP tracking reduce cheating risks. Optional webcam proctoring integration may also be used. Email or in-app notifications for upcoming quizzes and deadlines. Reminders for unattempted quizzes or pending results is given."

6. Discuss the structural and behavioral aspects of collaboration to show the use case realization for the following scenario in a canteen management system.

"A customer uses the mobile app to browse the menu, add items to the cart, and pay using a digital wallet. The system processes the order, sends a confirmation, and updates the order list for the canteen staff to prepare it. The requirements realized are

- Order Management: Orders are created, tracked, and updated in real time.
- Payment Handling: Integration with a payment gateway ensures smooth transactions.
- Inventory Management: Ensures only available items are ordered.
- Order Fulfillment: Staff receives orders in real-time and updates the status upon completion.

7. Design the vision document to explain the features identified for the system in question no 2.

8. Identify any two key use cases and show the detailed use case documentation for those two key use cases of **Canteen Management System**.

Canteen Management System automates order management, inventory control, billing, and reporting processes, aiming to enhance user experience, reduce operational inefficiencies, and ensure smooth functioning of the canteen. The user interface has a web-based or mobile application for customers to view the menu, place orders, and make payments.

An interactive display kiosks or touch screens for walk-in customers and admin dashboard for the canteen staff to manage orders, stock, and sales data. Customers can place orders in advance or on-site through the system.

Real-time order tracking for both customers and canteen staff is available and notifications for order completion or delays is provided. The canteen manager logs into the admin dashboard, checks the stock levels, and notices that a particular item is low on inventory. The manager creates a purchase order to restock the item.

- ~~9.a)~~ Develop testcases from the key usecases of canteen management system mentioned in Question No.8.

OR

- 9.b) List the functional and non functional requirements for the Canteen management system. Outline the Supplementary specification document for the same.
- 10.a) Discuss traceability relationship for requirements identified in the Canteen management system.

OR

- ~~10.b)~~ Elaborate on the techniques for risk mitigation involved in requirements and apply extreme programming principles to requirements risk mitigation for the requirements obtained in Canteen management system.

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