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Total No. of Questions : 5]

SEAT No. :

PE4192

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M.C.A. - I (Management)

SEP 505 MJ : SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

(2024 Pattern) (Semester - I)

Time : 2½Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) *All questions are compulsory.*
2) *Draw neat diagram wherever necessary.*
3) *Figures to the right indicate full marks.*

Q1) a) A reputed hotel chain wants to automate its day-to-day operations such as room booking, guest check-in/check-out, billing, and staff management. Currently, most of these activities are performed manually, leading to inefficiency, delays, and errors. To overcome these issues, the management has decided to develop a Hotel Management System (HMS) that will provide an integrated solution for handling hotel activities through a web and mobile platform.
The system should allow customers to search and book rooms online, receptionists to manage bookings and generate bills, and administrators to manage rooms, staff, and reports. The software must be secure, reliable, and easy to use.
As a system analyst, prepare Software Requirements Specification (SRS) for the proposed Hotel Management System as per IEEE format. **[10]**

OR

b) A reputed educational institution aims to design and implement a comprehensive College ERP (Enterprise Resource Planning) System to automate and integrate its academic and administrative processes. At present, various departments such as Admissions, Academics, Examination, Finance, and Library operate independently, leading to data redundancy, delays, and lack of coordination.
The proposed College ERP System will serve as a centralized platform connecting students, faculty, administrators, and management, ensuring smooth information flow and efficient operations. The system will include modules for student registration, attendance, examination management, fee payment, staff management, and report generation.
Prepare software requirement specification (SRS) in detail as per IEEE format. **[10]**

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Q2) a) A college's Training and Placement Cell aims to develop an online system to manage and streamline student placements and company interactions. The proposed Placement Management System will allow students to register by entering their personal details, academic qualifications, and skill sets. Students can also update their profiles when necessary. Companies/Organizations can register on the platform by providing details about their job openings, eligibility criteria, and other requirements. The system also provides a search facility that allows: **[10]**

i) Companies to search for suitable candidates based on qualifications or skills.

ii) Students to search and apply for relevant job opportunities. Draw Use case and Class diagrams for the above case

OR

b) Draw an activity diagram for the following case: **[5]**

A reputed educational institution plans to develop an Online Examination System to conduct assessments efficiently in a digital environment. The system should enable students to register. attempt exams, and receive instant results, while allowing administrators and examiners to manage exams securely and systematically.

The system allows students to:

i) Log in using valid credentials

ii) View available exams

iii) Start and attempt an examination within the given time limit

iv) Submit the completed test

v) View their results and feedback after evaluation

The administrator or examiner can:

i) Create and schedule exams

ii) Upload questions and set marking schemes

iii) Monitor ongoing exams

iv) Publish results

c) Draw Sequence and Collaboration Diagram for sending invitation of programme through telegram. **[5]**

Q3) a) Suppose a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three model i.e., organic, semi-detached & embedded. **[10]**

OR

b) Compute the function point, productivity, documentation and cost per function point for the following data **[10]**

- Number of user inputs (Avg) = 24
- Number of user outputs (LOW) = 46

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- Number of inquiries (high)= 8
- Number of files (Avg) = 4
- Number of external interfaces (Low)= 2
- Effort=36.9p-m
- Technical documents = 265 pages
- User documents = 122 pages
- Cost = $7744 month
- Various processing complexity factors are: 4, 1, 0, 3, 3, 5, 4, 4, 3, 3, 2, 2,4,5.

Q4) a) Amazon is one of the world's largest e-commerce platforms that enables users to conveniently shop for a wide range of products including electronics, apparel, groceries, books, and household essentials from the comfort of their homes. The system seamlessly connects customers, sellers, delivery agents, and administrators through an integrated mobile and web platform.

As a user of the Amazon system, identify and describe user stories for different user roles Customer, Seller, Delivery Agent, and Administrator. Each user story should represent a key functionality or user requirement that enhances convenience, efficiency, or user experience. **[5]**

b) Describe Agile principles and explain the roles of Scrum Master, Product Owner, Development Team. **[5]**

OR

c) Swift Food is an online food ordering and delivery platform that connects customers, restaurants, and delivery partners through a unified mobile and web application. The main goal of the system is to provide fast, affordable and convenient food delivery to customers while helping restaurants expand their reach and ensuring smooth coordination with delivery personnel.

As a user, identify and describe five user stories for the same. **[5]**

d) Summarize Agile Project Life cycle with Suitable diagram **[5]**

Q5) Write short note on (any two) **[10]**

a) GitHub
b) Project Backlog
c) Agile Tools
d) Software Configuration Management

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