PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
MCA(A.Y.-II) Winter 2024-25 Examination

Semester: I   Date: 19-12-2024
Subject Code: 05201106   Time: 02:00 PM TO 4:30 PM
Subject Name: Software Engineering   Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Make suitable assumptions whenever necessary.
3. Write the answers for both sections on separate answer sheets.

SECTION - A [30 Marks]				
Q1	**Answer the following questions:**	**[20]**	**CO**	**BT**
(a)	Answer **all** questions	(5)		
i.	Which of the following is a key component of any system? (A) Hardware (B) Input (C) Network (D) User interface	1	CO1	BT1
ii.	What is the primary purpose of an Integrated CASE (I-CASE) environment? (A) To improve team communication (B) To integrate tools for all phases of software development (C) To handle customer requirements (D) To manage server performance	1	CO2	BT2
iii.	What is a "sprint" in the Scrum framework?	1	CO4	BT1
iv.	Describe a characteristic of an information system.	1	CO1	BT2
v.	What is a System Requirement Specification (SRS)?	1	CO2	BT1
(b)	Attempt Any **Five** Questions out of Seven	(15)		
i.	Assess the impact of improper effort estimation on project failure.	3	CO1	BT4
ii.	Apply the concept of a system to explain the functioning of a payroll system in an organization.	3	CO1	BT3
iii.	How would you categorize different requirement engineering tasks for a mobile application?	3	CO2	BT3
iv.	What is the importance of team management in project success?	3	CO1	BT1
v.	Describe the importance of the building blocks of CASE in the software development process.	3	CO2	BT2
vi.	How would you estimate effort for a project with an uncertain scope?	3	CO1	BT3
vii.	Analyse how developing an information system can improve customer relationship management (CRM) in retail.	3	CO1	BT4
Q2	**Answer/Solve following in detail (Attempt any 2 out of 3)**	**[10]**		
(a)	How does behavioral feasibility impact system adoption?	5	CO2	BT4
(b)	Evaluate the effectiveness of scope and feasibility analysis in reducing project risks.	5	CO1	BT4
(c)	Examine the role of "feedback" and "control" in maintaining system equilibrium.	5	CO1	BT4
SECTION - B [30 Marks]				
Q1	**Answer the following questions:**	**[20]**	**CO**	**BT**
(a)	Answer **all** questions	(5)		
i.	What is the primary goal of Structured System Analysis and Design (SSADM)? (A) To increase the speed of the computer system (B) To ensure the system operates with minimal errors (C) To use a structured approach for system development (D) To design user-friendly interfaces	1	CO3	BT1

ii.	In Adaptive Software Development (ASD), which phase emphasizes experimentation and learning? (A) Speculation (B) Learning (C) Collaboration (D) Implementation	1	CO4	BT1
iii.	Explain the relationship between the conceptual model and the user's mental model in interface design.	1	CO4	BT2
iv.	How does an ER diagram help in database design?	1	CO3	BT2
v.	Explain the role of pair programming in XP and its impact on code quality.	1	CO4	BT2
(b)	Attempt Any **Five** Questions out of Seven	(15)		
i.	Create an interactive design for a help desk support system, considering user feedback.	3	CO4	BT3
ii.	Model a data design for an e-commerce application, including tables for customers and orders.	3	CO3	BT3
iii.	Compare adaptive software development and Scrum in terms of flexibility.	3	CO4	BT4
iv.	Examine the relationship between design modeling and overall system architecture.	3	CO3	BT4
v.	Create an ER diagram for a student management system that includes entities such as Students, Courses, and Instructors.	3	CO3	BT3
vi.	Compare different evaluation methods used for assessing UI design quality.	3	CO4	BT4
vii.	Compare the roles of the Scrum Master and Product Owner in Scrum methodology.	3	CO4	BT4
Q2	Answer/Solve following in detail (Attempt any 2 out of 3)	[10]		
(a)	Examine the significance of cost-benefit analysis in system design.	5	CO3	BT4
(b)	Develop a plan to introduce Agile practices into a team using the Scrum framework.	5	CO4	BT3
(c)	How would you apply the interface design model to redesign the navigation system of a website?	5	CO4	BT3