P P SAVANI UNIVERSITY

Fifth Semester of B. Tech. Examination

November 2022

SEIT 3010 Software Engineering

22.11.2022, Tuesday **Time: 10:00 a.m. To 12:30 p.m.** **Maximum Marks: 60**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1	Answer the following: (Any Five)	**[05]**	**CO**	**BTL**
(i)	Define Software Engineering (SE). State objective of SE.		**1**	**1**
(ii)	Justify "Software Engineering is a layered technology".		**2**	**5**
(iii)	State difference between <<include>> and <<extends>> in use-case diagram.		**1**	**2**
(iv)	Define the concept of refinement in system design.		**2**	**1**
(v)	State importance of software project scheduling		**3**	**2**
(vi)	Define effort estimation. List various techniques used for effort estimation		**1,3**	**1**
Q - 2 (a)	Explain with suitable Illustration about PROTOTYPE model. List the situation were PROTOTYPE model is bested suited	**[05]**	**1,3**	**3**
Q - 2 (b)	The Computer Services Division of a University wants to design a software solution to automate its Complaints Management System. The system should be allowed to record all the complaints from the users/departments of the University and provide services on priority basis. It should also produce reports of daily listing of complaints (attended and unattended), pending, etc. Assumptions can be made, wherever necessary. To accomplish the above mentioned tasks, perform the following : (a) Prepare list of functional and non-functional requirements. (b) Draw use-case diagram for the above mention software solution.	**[05]**	**2,3**	**3,4**
	OR			
Q - 2 (a)	What is Requirement Engineering (RE)? List and explain seven distinct tasks of RE.	**[05]**	**2**	**2**
Q - 2 (b)	Define Software Requirement Specification (SRS). Explain the standard structure/format that needs to follow while preparing SRS.	**[05]**	**2**	**2**
Q - 3 (a)	What are the different architectural styles applied for software development? Explain with diagrams.	**[05]**	**2**	**2**
Q - 3 (b)	Elaborate the principles for good user interface design.	**[05]**	**2**	**2**
	OR			
Q - 3 (a)	Describe the COCOMO model in detail for software estimation.	**[05]**	**2,3**	**2**

Q - 3 (b)	For University Event Management System prepare the following: (i) Work Breakdown Structure (WBS) (ii) Gantt Chart	[05]	3	6
Q - 4	Write short note on any one:	[05]		
(i)	Process of Risk Management		3	1
(ii)	Incremental Process Model		2	1

SECTION – II

Q - 1	Answer the following: (Any Five)	[05]		
(i)	What is Software Quality Assurance?		3	1
(ii)	What is the importance of coding standards?		3	2
(iii)	Define Error.		4	1
(iv)	What is the goal of Testing?		4	2
(v)	Where beta testing is done?		3,4	2
(vi)	List 3 different techniques of Black Box Testing.		3,4	2
Q - 2 (a)	Explain the concept of pair programming followed in coding process. What are the benefits of using pair programming?	[05]	2,4	2
Q - 2 (b)	What is Cyclomatic Complexity? Explain with example using 3 methods to calculate cyclomatic complexity.	[05]	3,4	3
	OR			
Q - 2 (a)	Explain code inspection in detail with merits and demerits.	[05]	2,4	2
Q - 2 (b)	Explain Equivalence Class Partitioning with suitable example.	[05]	4	2
Q - 3 (a)	Prepare Test Case and Test Scenario for any three functionality of Online Train Ticket Reservation.	[05]	4	6
Q - 3 (b)	Explain W5HH principle suggested by Boehm. Also explain list of questions that needs to be answered in order to develop a project plan considering W5HH principle.	[05]	3	2
	OR			
Q - 3 (a)	Prepare Test Case and Test Scenario for any three functionality of Hotel Room Booking System.	[05]	4	6
Q - 3 (b)	Explain merits and demerits of CASE tools.	[05]	3	2
Q - 4	Write short note on any one:	[05]		
(i)	Explain Boundary Value Analysis with example.		4	2
(ii)	Define software quality assurance. List down various activities performed in software quality assurance.		3	2

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CO : Course Outcome Number BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create