PAPER ID-410570

Roll No: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

BTECH
(SEM VI) THEORY EXAMINATION 2023-24
SOFTWARE ENGINEERING

TIME: 3 HRS   **M.MARKS: 100**

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x 10 = 20**

Q no.	Question	Marks	CO
a.	Define the term Software Engineering.	02	1
b.	Explain the drawbacks of waterfall model.	02	1
c.	Compare ISO 9000 and SEI-CMM.	02	2
d.	Define Verification and Validation.	02	2
e.	Define Cyclomatic Complexity.	02	3
f.	What is Pseudo Code? How it differs from Algorithm?	02	3
g.	Describe the importance of black box testing.	02	4
h.	Explain Error, Fault and Failure.	02	4
i.	List any two reasons for increase in the software costs.	02	5
j.	Discuss the need of Software Version Control.	02	5

SECTION B

2. **Attempt any *three* of the following:**   **3 x 10 = 30**

a.	Explain SDLC. Also discuss various activities during SDLC	10	1
b.	Discuss the importance of software specification Document. And also explain the typical IEEE format of SRS document.	10	2
c.	Discuss how measurement is different from metrics. Also discuss various metrics for size estimation of a project.	10	3
d.	Write a short note on: (i) Mutation testing (ii) Alpha & Beta testing (iii) Regression testing	10	4
e.	Why is Software maintenance required? Explain types of maintenance with examples.	10	5

SECTION C

3. **Attempt any *one* part of the following:**   **1 x 10 = 10**

a.	Explain prototyping model of SDLC. What are its advantages over conventional model? Explain with diagram.	10	1
b.	Discuss Spiral Model for Software development life cycle and highlight the Risk analysis in this context.	10	1

4. **Attempt any *one* part of the following:**   **1 x 10 = 10**

a.	Explain Requirement Elicitation techniques in detail.	10	2
b.	Discuss about decision tables and its components. Create a decision table. for the following scenario; a bookstore gets a trade discount of 25% for order more than 6 books; for order from libraries and individuals, 5% allowed on orders of 6-19 copies per book title; 10% on orders for 20-49 copies per book title; 15% on orders for 50 copies or more per book title.	10	2

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5.	**Attempt any *one* part of the following:**		**1 x 10 = 10**	
a.	Explain the term Cohesion and Coupling? Also explain the various forms of cohesion and coupling?	10	3
b.	What are the various software design strategies? Analyze the points of difference between Function Oriented Design and Object-Oriented Design.	10	3

6.	**Attempt any *one* part of the following:**		**1 x 10 = 10**	
a.	A program reads an integer number within the range [1,100] and determines whether it is a prime number or not. Design test cases for this program using BVC, robust testing, and worst-case testing methods.	10	4
b.	What is Integration Testing? Explain different approaches used for integration testing.	10	4

7.	**Attempt any *one* part of the following:**		**1 x 10 = 10**	
a.	What do you mean by the term software re-engineering? Why is it required?	10	5
b.	What is cost analysis in context of software? Explain COCOMO model with the help of schematic diagram.	10	5