



PRESIDENCY UNIVERSITY

BENGALURU

Roll No.													
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End Term Examinations – May/June 2026

Date: 14 – 05- 2026

Time: 09:30am – 12:30pm

School: SOCSE	Program: B.Tech (CIT,ISE)	
Course Code: CSE2271	Course Name: Software Design and Development	
Semester: IV	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	24	24	26	26	-

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	List the main goal of software engineering?	2 Marks	L1	C01
2.	Name any four SDLC models	2 Marks	L1	C01
3.	What is requirements engineering?	2 Marks	L1	C02
4.	Define modularity.	2 Marks	L1	C02
5.	Define a sprint?	2 Marks	L1	C03
6.	Define a Product Owner in Scrum	2 Marks	L1	C03
7.	Define acceptance testing?	2 Marks	L1	C03
8.	Define black box testing?	2 Marks	L1	C04
9.	Define software quality assurance (SQA)	2 Marks	L1	C04
10.	Define reverse engineering?	2 Marks	L1	C04

Part B

Answer the Questions.

Total Marks 80M

11.	a.	Explain how a prototyping model works. Explain types of prototyping.	10 Marks	L2	CO1
	b.	Explain the reasons why software engineering is required.	10 Marks	L2	CO1
Or					
12.	a.	Draw the diagrams of both classical waterfall model and iterative waterfall model and explain their main differences.	10 Marks	L2	CO1
	b.	Compare waterfall model, spiral model, and prototype model based on the following features (i) Flexibility (ii) Customer involvement (iii) Risk handling (iv) When to use (v) Type of approach	10 Marks	L2	CO1

13.	a.	Explain the following characteristics of a SRS document (i) Correctness (ii) Completeness (iii) Unambiguity (iv) Consistency (v) Traceability	10 Marks	L2	CO2
	b.	Prepare a SRS document for an E-commerce application indicating the Users, functional requirements, and Non-functional requirements.	10 Marks	L3	CO2

Or

14.	a.	Why a good user interface design is important? Explain the following golden rules of interface design (i) Enable frequent users to use shortcuts (ii) Offer simple error handling (iii) Permit easy reversal of actions	10 Marks	L2	CO2
	b.	What is a use case diagram? Draw a use case diagram for airline reservation system indicating the include and extend relationships also.	10 Marks	L2	CO2

15.	a.	What are the key values and principles of agile manifesto. Explain various scrum roles.	10 Marks	L2	CO3
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	b.	Define a stake holder. Explain the responsibilities of project manager, customer, company, and Government.	10 Marks	L2	CO3
Or					
16.	a.	With a neat diagram explain in detail the DevOps architecture.	10 Marks	L2	CO3
	b.	Explain the benefits of scaling. Explain user stories with example.	10 Marks	L2	CO3

17.	a.	Consider a problem for the determination of the nature of the roots of a quadratic equation where the inputs are 3 variables (a, b, c) and their values may be from the interval [0, 100]. Apply BVA to generate test cases. The output may be one of the following depending on the values of the variables: Not a quadratic equation, Real roots, Imaginary roots, Equal roots. Conditions for types of roots: • Roots are real if $(b^2 - 4ac) > 0$ • Roots are imaginary if $(b^2 - 4ac) < 0$ • Roots are equal if $(b^2 - 4ac) = 0$ • Equation is not quadratic if $a = 0$	10 Marks	L3	CO4
	b.	Explain the various steps involved in software reverse engineering.	10 Marks	L2	CO4
Or					
18.	a.	<pre>IF A = 354 THEN IF B > C THEN A = B ELSE A = C END IF END IF PRINT A</pre> For the above given code apply three methods to calculate the cyclomatic complexity. List the independent paths in the CFG.	10 Marks	L3	CO4
	b.	Explain the seven phases of software maintenance.	10 Marks	L2	CO4