S.No. : 507 BCS3501

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 33220 Roll No. 1 2 2 0 4 3 2 [redacted]

B. Tech Examination 2024-25

(Odd Semester)

SOFTWARE ENGINEERING

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : $8 \times 1 = 8$

   (a) What is the prime objective software engineering?

   (b) What are the approaches of debugging?

   (c) Distinguish between alpha and beta testing.

   (d) Mention any two non-functional requirments on software to be developed.

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(f) What do you mean by good software design?

(g) What is code walk through?

(h) Howmany types of software quality assurance?

SECTION – B

2. Attempt any two parts of the following: 2×6=12

(a) Explain the water fall model with the help of diagram.

(b) What are the different characterstics of software requirement specification (SRS)?

(c) What is object oriented design? Explain in detail.

(d) Explain any two types of testing techniques used in system testing.

SECTION – C

Note:- Attempt any two parts from each question. Each part carry equal marks. 8×6=48

3. (a) Explain system development life cycle model (SDLC).

(b) What are the different types of software and also explain the different charactersitics of software?

(c) What is system? What are the different elements of system?

4. (a) Explain data flow diagram with the help of example?

(b) What is COCOMO model? Explain in detail.

(c) What is entity relationship diagram? Explain with the help of example.

5. (a) Explain modularization. Also explain the top-down and bottom-up design approach in modularisation.

(b) What are the software metrices and measurements? Explain.

(c) What is coupling and also explain the different types of coupling in software design?

6. (a) What is software maintenance? Explain the different types of software maintenance.

(b) Write a soft notes on :

(i) Code inspection

(ii) Software quality factors

(c) What are the different levels of software quality assurance? Explain.

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(e) Define verification and validation.

(f) List out the importance of cost estimation in software development.

(g) List the process maturity levels in SEI's CMM.

(h) Why testing is important with respect to software?

SECTION – B

2. Attempt any two parts of the following : $2 \times 6 = 12$

(a) Explain iterative waterfall and spiral model for software life cycle and discuss various activities in each phase.

(b) Explain the feasibility studies. What are the outcomes? Does it have either implicit or explicit effects on software requirement collection?

(c) Explain the importance of user interface design in sale of software?

(d) Explain the integration testing process and system testing process and discuss their outcomes.

SECTION – C

Note:- Attempt any two parts from each question. Each part carry equal marks. $8 \times 5 = 40$

3. (a) List any four categories of CASE tools.

(b) Discuss the concept of software maintenance process.

(c) justify the statement "Software maintenance is costlier".

4. (a) What do you mean by boundary value analysis? Give two examples of boundary value testing.

(b) What is the impact of requirement changes during development of a software product?

(c) Explain the set of principles for a software engineering design.

5. (a) Suggest software testing sequence for a 100% bug free software. Explain.

(b) Explain the maintenance activities and maintenance problems.How the cost of maintenance is estimated?

Student Name: University Roll No.:	Printed Pages:1

School of Engineering
First Theory Sessional Examination
Odd Semester (AS: 2024-25)

B. Tech: CSE [Year: 3rd]	[Semester: 5th]
Course Title: Software Engineering Course Code: BCS3501	Max Marks: 30 Time: 1 Hr.

Instructions: 1- Mention any assumptions made.
2- Notations have usual meaning.

	SECTION 'A' Q.N.1. Attempt all parts of the following:	Course Objective	Marks
a)	Define the term Software Engineering.	Co1	1
b)	Explain the various characteristics ofsoftware.	Co1	1
c)	Differentiate between software and hardware in brief.	Co1	1
d)	What are the important activities that are carried out during the feasibility study?	Co2	1
e)	Explain the significance of SDLC models in software engineering.	Co1	1
	SECTION 'B' **Q.N.2. Attempt any two parts of the following:**	**Course Objective**	**Marks**
a)	Compare and contrast Prototype Model and Spiral Model.	Co1	7.5
b)	What are Formal Technical reviews and how are they conducted?	Co2	7.5
c)	What is SRS Document? Explain goals, use, benefits and properties of SRS documents.	Co2	7.5
	SECTION 'C' **Q.N.3. Attempt any one part of the following**	**Course Objective**	**Marks**
a)	List and explain the different methods of requirement elicitation (collection).	Co2	10
b)	Write short note on CASE tools.	Co2	10
c)	What is Axiomatic specification of requirements? Explain with example.	Co2	10

Table 1: Mapping between Cos and questions

Cos	Questions Numbers	Total Marks
Co1	1a, 1b.1c,1e, 2a.	11.5
Co2	1d, 2b, 2c, 3a, 3b, 3c.	46