Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem Examination Dec-2023

CS3CO40 Software Engineering

Programme: B.Tech. Branch/Specialisation: CSE All

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. Which one is not one of the fundamental activities in a software process? **1**

(a) Software Specification (b) Software Development

(c) Software cost negotiation (d) Software validation

ii. Component based software engineering is not characterised with- **1**

(a) Reduced cost and risks (b) Faster Delivery

(c) Reuse Oriented (d) Large amount of developed code

iii. SRS must include characteristics except- **1**

(a) Scope of the software product

(b) User characteristics

(c) Functional and non functional requirements

(d) Programming logics and algorithm

iv. Which one of the following is not a step of requirement engineering? **1**

(a) Elicitation (b) Design (c) Analysis (d) Documentation

v. In Design phase, which is the primary area of concern- **1**

(a) Architecture (b) Data

(c) Interface (d) All of these

vi. Which architectural style goal is to achieve Integrity? **1**

(a) Data Flow Architecture

(b) Call and Return Architecture

(c) Data Centered Architectures

(d) None of these

vii. Among which testing category Alpha testing and Beta testing falls- **1**
(a) Regression Testing (b) Unit Testing
(c) Acceptance Testing (d) Integration Testing

viii. Who identifies, documents, and verifies that corrections have been made to the software? **1**
(a) Project manager (b) Project team
(c) SQA group (d) All of these

ix. Software Metrics helps to- **1**
(a) Improve the process (b) Assess quality
(c) Control the project (d) All of these

x. Software development cost does not include- **1**
(a) Quality control cost (b) End user training cost
(c) Maintenance cost (d) Marketing cost

Q.2 i. Define Software engineering and its objectives. **2**

ii. Justify that- Programs that are developed using evolutionary development are likely to be difficult to maintain. **3**

iii. How does a spiral model represent a process suitable to represent a real time problem. **5**

OR iv. Discuss the advantages and disadvantages of waterfall model, spiral model and component based development model. **5**

Q.3 Attempt any two:

i. Differentiate functional and non-functional requirements. **5**

ii. What is Requirement elicitation? Also define all the requirement elicitation techniques. **5**

iii. Draw the Data flow diagram (level 0, level 1 and level 2) of an online food delivery system. **5**

Q.4 i. What is the role of architectural design in SDLC. Classify various architecture styles. **3**

ii. Explain software configuration management with suitable example. **7**

OR iii. Describe all the software design principles in detail. **7**

Q.5 i. Explain about test cases. What are the best practices for writing test cases. **4**

ii. Differentiate Validation and Verification with the help of suitable example. **6**

OR iii. Explain various black box and white box testing technique. **6**

Q.6 Attempt any two:

i. Write a short note on COCOMO Model. **5**

ii. Write a short note on Process and Product metrics. **5**

iii. Explain size oriented and function oriented metrics. **5**

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Marking Scheme
Software Engineering-CS3CO40(T)

Q.1	i.	c) Software cost negotiation		**1**
	ii.	d) Large amount of developed code		**1**
	iii.	d) Programming logics and algorithm		**1**
	iv.	b) design		**1**
	v.	d) All of the above		**1**
	vi.	c) Data Centered Architectures		**1**
	vii.	c) Acceptance Testing		**1**
	viii.	c) SQA group		**1**
	ix.	a) Improve the process b) Assess quality c) Control the project d) All of these		**1**
	x.	d) Marketing cost		**1**
Q.2	i.	Definition of software engineering-	1 Mark	**2**
		Objectives-	1 Mark	
	ii.	Explanation –	(As per explanation)	**3**
	iii.	Explanation –	(As per explanation)	**5**
OR	iv.	The advantages ….. .. model.	(As per explanation)	**5**
Q.3	i.	Differentiate ……requirements.	(Atleast 5 points)	**5**
	ii.	Requirement elicitation-	2 Marks	**5**
		Requirement elicitation technique –	3 Marks	
OR	iii.	Level 0 DFD –	1 Marks	**5**
		Level 1 DFD –	2 Marks	
		Level 2 DFD –	2 Marks	
Q.4	i.	Architectural design-	1 Mark	**3**
		Various architecture styles-	2 Marks	
	ii.	Software …… description –	5 Marks	**7**
		Diagram –	1 Mark	
		Example –	1 Marks	
OR	iii.	12 principles –	(As per explanation)	**7**
Q.5	i.	Test case definition –	2 Marks	**4**
		Practices for writing test case –	2 Marks	
	ii.	Differentiate Validation and Verification with the help of suitable example. (atleast 6 points)		**6**
OR	iii.	Testing Hierarchy –	2 Marks	**6**
		Description of testing types –	4 Marks	
Q.6		Attempt any two:		
	i.	COCOMO Model	(As per explanation)	**5**
	ii.	Process	2.5 Marks	**5**
		Product metrics	2.5 Marks	
	iii.	Compare size …….. metrics	2.5 Marks	**5**

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