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

Enrollment No.....

Faculty of Engineering / Science

End Sem Examination May-2024

CA5CO25 Software Engineering Principles

Programme: MCA / BCA-MCA (Integrated) Branch/Specialisation: Computer Application

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. Software consists of _____. **1**

(a) Programs + hardware manuals
(b) Set of instructions + operating procedures
(c) Set of programs
(d) Programs + documentation + operating procedures

ii. Which one of the following models is not suitable for accommodating any change? **1**

(a) Extreme programming (b) Waterfall model
(c) Prototyping model (d) Spiral model

iii. Agile software development is based on- **1**

(a) Incremental development (b) Iterative development
(c) Linear development (d) Both (a) and (b)

iv. How many phases are there in scrum? **1**

(a) Two
(b) Three
(c) Four
(d) Scrum is an agile method which means it does not have phases

v. Data Flow Diagram (DFD) is also known as a- **1**

(a) Structure chart (b) Gantt chart
(c) Bubble chart (d) PERT chart

vi. Choose the option that does not define function oriented software design **1**

(a) It consists of module definitions
(b) Modules represent data abstraction
(c) Modules support functional abstraction
(d) None of these

vii. Class diagram represents _____. **1**
(a) Behavioural view (b) Structural view
(c) Implementation view (d) User view

viii. UML stands for- **1**
(a) Universal Modeling Language
(b) Unified Meta Language
(c) Unified Modeling Language
(d) Universal modular language

ix. Unit testing makes heavy use of _____ testing. **1**
(a) Gray box (b) Black box
(c) White box (d) Regression testing

x. White box testing is done at _____ design and implementable code. **1**
(a) High level (b) Low level
(c) Intermediate level (d) System level

Q.2 Attempt any two:

i. What are the necessities of life cycle model? Elaborate on the various issues of software life cycle. **5**

ii. Explain the features of spiral model with the help of its process diagram. How are the risks handled in this model? **5**

iii. What is a prototype? What are the advantages of constructing a prototype? **5**

Q.3 Attempt any two:

i. What is the agile manifesto? What is the importance of the agile methodology? **5**

ii. What is the difference between functional and non functional requirements? **5**

iii. What is SRS? Why the SRS document is also known as black-box specification of a system? **5**

Q.4 i. Define the concept of cohesion and coupling. State the difference. **4**

ii. Explain about the various design concepts considered during design. **6**

OR iii. Compare the relative advantages of the object-oriented and function oriented approaches to software design. **6**

Q.5 i. What is a stereotype in UML? Explain with some situations where stereotype can be used. **4**

ii. Explain use case diagram. What are the four main components of a use case diagram? **6**

OR iii. Explain domain model in software engineering. **6**

Q.6 Attempt any two:

i. What is the necessity of unit testing? Write down all unit test considerations. **5**

ii. Explain different typer of software testing. **5**

iii. Explain in detail about white box testing and black box testing. **5**

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Marking Scheme

CA5CO25-Software Engineering Principles

Q.1	i)	d) Programs + documentation + operating procedures	**1**
	ii)	b) Waterfall Model	**1**
	iii)	d) Both Incremental and Iterative Development	**1**
	iv)	b) Three	**1**
	v)	c) bubble chart	**1**
	vi)	b) Modules represent data abstraction	**1**
	vii)	b) Structural view	**1**
	viii)	c) Unified Modeling Language	**1**
	ix)	c) white box	**1**
	x)	b) low level	**1**
Q.2		Attempt ant two-	
	i.	What are the necessities of Life cycle model?	**2**
		Elaborate on the various issues of Software life cycle.	**3**
	ii.	Explain the features of spiral model with the help of its process diagram?	**3**
		How are the risks handled in this model.	**2**
	iii.	What is a prototype?	**3**
		What are the advantages of constructing a prototype?	**2**
Q.3		Attempt ant two-	
	i.	What is the agile manifesto?	**3**
		What is the importance of the agile methodology?	**2**
	ii.	What is the difference between functional and non-functional requirements?	**5**
	iii.	What is SRS?	**2**
		Why the SRS document is also known as black-box specification of a system.	**3**
Q.4	i.	Define the concept of cohesion and coupling.	**2**
		State the difference.	**2**
	ii.	Explain about the various design concepts considered during design?	**6**
OR	iii.	Compare the relative advantages of the object-oriented and function oriented approaches to software design.	**6**
Q.5	i.	What is a stereotype in UML?	**2**
		Explain with some situations where stereotype can be used.	**2**
	ii.	Explain use case diagram.	**2**

		What are the 4 main components of a use case diagram?	**4**
OR	iii.	What is domain model in software engineering?	**6**
Q.6		Attempt any two-	
	i.	What is the necessity of unit testing?	**2**
		Write down all unit test considerations.	**3**
	ii.	Explain about system testing	**5**
	iii.	Explain in detail about	
		White box testing	**2.5**
		and Black Box Testing.	**2.5**

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