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

Enrollment No.....

Faculty of Engineering

End Sem (Odd) Examination Dec-2019

CS3CO26/IT3CO22 Software Engineering

Programme: B.Tech. Branch/Specialisation: CS/IT

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.

Q.1 i. Which of the following is not a goal of Software Engineering? **1**

(a) Rapid Development (b) Meet Specification

(c) On time delivery (d) Within budget

ii. _____ is the best process model when requirements are not clear. **1**

(a) Spiral (b) Evolutionary

(c) Waterfall (d) Prototyping

iii. Functionality is **1**

(a) Functional Requirement (b) Non-functional requirement

(c) Dependent on scenario (d) None of these

iv. The difference between activity and swimlane is because of **1**

(a) Activity (b) Actor (c) Start node (d) Synchronization

v. Which of the following depends on user's perspective? **1**

(a) State (b) Abstraction

(c) Relationship (d) None of these

vi. Which of the following does not corresponds to category of architecture style? **1**

(a) Deployment (b) Structure

(c) Communication (d) Hierarchy

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. Cost of quality doesn't include **1**

(a) Prevention cost (b) Appraisal cost

(c) Failure cost (d) None of these

P.T.O.

	ix.	Which is not a valid cost driver for effort estimation? (a) Unit testing (b) Product Complexity (c) Reliability (d) Staff Salary	**1**
	x.	COCOMO model does not classifies software as? (a) Organic (b) Modular (c) Embedded (d) Semi-detached	**1**
Q.2	i.	Define Software Engineering as per IEEE and list different objectives.	**4**
	ii.	Enumerate the deciding factors to choose a particular process model corresponding to a product to be developed?	**6**
OR	iii.	Explain the six best practices for software development as described by Rational Unified Process.	**6**
Q.3	i.	"The Internet User quickly sees her current account balance on the laptop screen". The above requirement is ambiguous in various aspects. Write correct statement.	**3**
	ii.	Analysis diagrams in UML are related to each other. Justify.	**7**
OR	iii.	The success of software depends on how well the requirement analysis activity has been carried out. Explain the process of requirement elicitation. Also describe the different requirement elicitation techniques.	**7**
Q.4	i.	How abstraction can be considered as part of software design?	**4**
	ii.	Differentiate between architecture and design. Also comment about which is more significant.	**6**
OR	iii.	Define Software design. What potential difference it has when compared to analysis.	**6**
Q.5	i.	Differentiate between verification and validation. Do both make use of test-case design methods and testing strategies?	**3**
	ii.	Define software quality and its principles. Explain different types of testing.	**7**
OR	iii.	What are the various categories of risk involved in software development? Explain the steps of risk management.	**7**

Q.6		Attempt any two:	
	i.	Explain the class oriented metrics taking a suitable example. Justify that a deep class hierarchy leads to greater design complexity.	**5**
	ii.	How does software metrics improve the quality of product?	**5**
	iii.	Compute the function point value for a project with the following information domain characteristics: Number of user inputs: 32 Number of user outputs: 60 Number of user inquiries: 24 Number of files: 8 Number of external interfaces: 2 Assume that all complexity adjustment values are average. Assume sum(Fi) is 52 for average.	**5**

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Marking Scheme
CS3CO26/IT3CO22 Software Engineering

Q.1	i.	Which of the following is not a goal of Software Engineering? (a) Rapid Development	**1**
	ii.	_____ is the best process model when requirements are not clear. (b) Evolutionary	**1**
	iii.	Functionality is (b) Non-functional requirement	**1**
	iv.	The difference between activity and swimlane is because of (b) Actor	**1**
	v.	Which of the following depends on user's perspective? (b) Abstraction	**1**
	vi.	Which of the following does not corresponds to category of architecture style? (a) Deployment	**1**
	vii.	Among which testing category Alpha testing and Beta testing falls? (c) Acceptance Testing	**1**
	viii.	Cost of quality doesn't include (d) None of these	**1**
	ix.	Which is not a valid cost driver for effort estimation? (d) Staff Salary	**1**
	x.	COCOMO model does not classifies software as? (b) Modular	**1**

Q.2	i.	Software Engineering as per IEEE List different objectives	2 marks 2 marks	**4**
	ii.	Factors to choose a particular process model corresponding to a product to be developed 1 mark for each point	 (1 mark * 6)	**6**
OR	iii.	Six best practices for software development 1 mark for each point	 (1 mark * 6)	**6**

Q.3	i.	Correct statement.		**3**
	ii.	Analysis diagrams in UML are related to each other. Stepwise marking		**7**
OR	iii.	Process of requirement elicitation Requirement elicitation techniques four techniques 1 mark for each (1 mark * 4)	3 marks 4 marks	**7**

Q.4	i.	Abstraction can be considered as part of software design		**4**
	ii.	Differentiate between architecture and design More significant	3 marks 3 marks	**6**
OR	iii.	Software design Potential difference it has when compared to analysis 1 mark for each difference (1 mark * 4)	2 marks 4 marks	**6**

Q.5	i.	Differentiate between verification and validation Use of test-case design methods and testing strategies	2 marks 1 mark	**3**
	ii.	Software quality and its principles Types of testing at least three	4 marks 3 marks	**7**
OR	iii.	Categories of risk involved in software development Steps of risk management	4 marks 3 marks	**7**

Q.6		Attempt any two:		
	i.	Class oriented metrics with example Justification	2.5 marks 2.5 marks	**5**
	ii.	Software metrics improve the quality of product 1 mark for each point	 (1 mark * 5)	**5**
	iii.	Compute the function point value Stepwise marking		**5**

Solution:

Domain Value	Count	Weighing factor for Average	Total
Number of user inputs	32	4	128
Number of user outputs	60	5	300
Number of user inquiries	24	4	96
Number of files	8	10	80
Number of external interfaces	2	7	14
Count Total			618

FP = count total *[0.65 +0.01* Sum Fi]

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