PES University, Bangalore
(Established under Karnataka Act 16 of 2013)

B.E Computer Science - 7TH SEMESTER – Aug-Dec 2019

END SEMESTER ASSESSMENT (ESA)

UE16CS402 - Software Engineering

Time: 2 Hrs	Answer All Questions	Max Marks: 60

- Answers should be in the same order as the questions
- Make assumptions where-ever necessary and write the assumptions and the Answers
- Length of answers should be proportional to the marks allocated
- MCQs – Please write the choice number clearly,

1	a	Discuss how the SCRUM model adheres to any 4 points which makes the process to be Agile or Adhere to the Agile Manifesto	4
	b	Discuss the steps involved in the Requirement Engineering Process with one-line description of what is being achieved as part of each step	4
	c	Answer **True** or **False** for the following 1. Requirements can be changed with any SDLC 2. V Model has testing happening in parallel with development 3. Pair Programming is a Practice which can be used as part of any Agile or Plan Driven Lifecycle 4. Component Development Life Cycle differs from Plan or Agile Lifecycles in Packaging and Distribution Phases	4

2	a	Discuss an approach towards how to choose a lifecycle for a project? Use 2 examples on how a lifecycle was chosen	4
	b	Briefly discuss any 4 factors (drivers) that influence Software Architecture	4

	c	Choose the correct Answer
		
		1. Which of the following does not belong to the Requirement Analysis Process?
		    a. Pareto Analysis
		    b. Fish Bone Analysis
		    c. De Bono Technique
		    d. MoSCoW
		2. These are Models used in Requirements Engineering
		    a. Prose
		    b. ER Diagrams
		    c. FSMs
		    d. All of the Above
			4

2	c	3. A Product Lifecycle has the following stages	

3. A Product Lifecycle has the following stages

   1. Introduction 2. Growth 3. Maturity 4. Discontinuance 5. Obsolescence

   The order of occurrence of the above stages are

   a. 1,2,3,4,5
   b. 1,2,3,5,4
   c. 1,2,4,3,5
   d. None of the above

4. The following defines the characteristics of a Product Line

   a. Pro-active Approach to Reuse of Software
   b. Bottoms up approach of product development
   c. Product family with many commonalities and few differences
   d. Plan driven approach to product development

3	a	Discuss any Design Pattern using its Intent, Description and an Example	4
	b	Contrast 1. Coding Rules and Coding Guidelines 2. Code Inspection and Reviews 3. Packaging and Install Tools 4. Resolved and Closed State of Bug in a Bug Tracking System	4
	c	Distinguish between Black-box and White-box testing? Indicate two advantages and disadvantages of both? When would you use each of them?	1-2-1

4	a	You are shopping in a large Multi Brand Retail Store, and when you reach the payment counter, you have 3 choices. If you are a new customer, you are offered a choice to open a credit card account, when you will get a 15% discount on all your purchases today, if you are an existing customer and you hold a loyalty card, you get a 10% discount on the purchases, if you have a coupon you can get 20% off today (but it can't be used with the 'new customer' discount). Discount amounts are added, if applicable. If you have to write test cases for this, how many test cases would you need for the same? Justify the same. Make assumptions as necessary needed for testing and write one sample test case including all the things which you would need, which can have the test case to be executed by an uninvolved tester.	4
	b	Discuss with an example what do you understand by the following 1. Smoke Testing 2. Regression Testing 3. Localization Testing 4. Startup/Shutdown Testing	4

	c	Choose the one which does not belong to the group
		1. The following illustrates the Maintainability Quality Attribute of a program
		   a. Mean time to change
		   b. Change requests to new version
		   c. Cost to Correct
		   d. Failures/hour of operation
			4

4		2. These are good examples of Quality attributes from a Product operation perspective	

		a. efficiency
		   b. Reliability
		   c. Testability
		   d. Usability	

		3. Capability Maturity Model has the following levels of maturity	

		a. Initial
		   b. Planned
		   c. Managed
		   d. Optimized	

		4. The following fall into the boundaries of Professional Ethics	

		a. Skill
		   b. Integrity
		   c. Accountability
		   d. Non-Plagiarism	

5	a	Discuss what is Patching? What do you understand by Hot and Cold patching? Where does this fit in the Maintenance Lifecycle?	1-2-1
	b	Discuss any 4 reasons why an Organization would like to look at Global Development? Discuss any 4 challenges associated with Global Development.	4

	c	Choose the most appropriate one in the group
		
		1. The following characterizes a Hacker
		   a. Cleverness to move ahead in spite of obstacles or challenges
		   b. Capability to explore and exploit weakness of system
		   c. Unethical and with criminal orientation
		   d. Approaches solutions in un-conventional means
		2. The following are the Deployment goals for Applications and Services
		   a. Consistent and Successful Deployment
		   b. Support increase in frequency of Deployment
		   c. Support faster time to Market
		   d. All of the Above
		3. DevOps
		   a. Has no influence on the quality of the product
		   b. Extends Delivery to the Operations team and Operations feedback to the Delivery team
		   c. Achieves faster deployment of products to market
		   d. Promotes better collaborations between Dev and Operations
		4. ITIL
		   a. Describes a set of best practices for IT Service Management processes
		   b. Is organization and technology specific
		   c. Is available as an IT Service Lifecycle
		   d. Supports effective utilization of the IT Infrastructure for Stability, Scaling, Responsiveness
			4