KIET Group of Institutions

(Department of Information Technology)
IT/ B.Tech., 6th Semester
CT-1 Examination, (2021-22) EVEN Semester
Software Engineering (KCS601)

Duration: 2 hrs   **Max. Marks: 60**

		Section-A			
Attempt all the questions of this section			**(2X10=20)**		
Q. No.		**Question**	**Marks**	**CO**	**BL / KC***
1.	a	Define the term "Program" and "Software". Software includes program and documents.	2	1	1/F
	b	Discuss the characteristics of software. Aging, wear out, non-tangible.	2	1	2/C
	c	Spiral model is not suitable for small projects. Explain. it is expensive. Too much dependability on Risk Analysis: The successful completion of the project is very much dependent on Risk Analysis. Without very highly experienced experts, it is going to be a failure to develop a project using this model.	2	1	2/C
	d	What do you understand by software crisis? The difficulty of writing the code for a computer program which is correct and understandable is referred to as software crisis.	2	1	2/C
	e	• List various types of Risk involved with a software project development. Schedule Risk : Schedule related risks refers to time related risks or project delivery related planning risks. ... • Budget Risk : ... • Operational Risks : ... • Technical Risks : ... • Programmatic Risks	2	1	1/C
	f	Define Software engineering. engineering branch associated with development of software product using well-defined scientific principles, methods and procedures	2	1	1/F
	g	List the advantages of Iterative Waterfall Model. Every phase contains feedback path to its previous phase	2	1	1/F
	h	Describe Nonfunctional requirements of software? Reliability, maintainability, usability etc.	2	2	2/C
	i	Illustrate the characteristics of a good SRS document. correct, complete, consistent, traceable, verifiable etc.	2	2	2/C
	j	Explain the term information Modelling. representation of concepts and the relationships, constraints, rules, and operations to specify data semantics for a chosen domain.	2	2	2/C

		Section-B			
Attempt all the questions of this Section			**(5X4=20)**		
Q. No.		**Question**	**Marks**	**CO**	**BL/ KC***
2		Explain Prototyping model of software development. What is the effect of designing a prototype on the cost of the Software Project? The prototyping model is a systems development method in which a prototype is built, tested and then reworked as necessary until an acceptable outcome is achieved from which the complete system or product can be developed. effect of designing a prototype on the overall cost of a software project is to actually reduce the additional costs of restructuring and reframing it after its full-fledged development- which might cost a fortune	5	1	4/M
		OR			
		Identify the selection criteria for various life cycles Model? Explain with Suitable examples. Selection of a model is based on: Requirements, Development team, Users, Project type and associated risk			
3		What is the difference between functional and nonfunctional requirements of a system? Identify at least two functional and one nonfunctional requirement of an Automated Teller Machine (ATM). Functional: check their account balances, withdraw or deposit money, transfer money from one account to another, print a statement of account transactions. Non-Functional: Ease of access, efficiency, safety etc.	5	2	4/P

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	OR			
	Narrate the importance of software requirement specification. Explain a typical SRS structure and its parts. Scope, Functional and Non functional requirements, Interface requirements, stack holders.			
4	Discuss are the similarities and differences between Conventional and Software Engineering process? Intangible, No laws, no effect by environmental factors.	5	1	2/C
	OR			
	Explain different phases of Software development life cycle in detail. RA & D, Design, Code, Test and maintenance.			
5	Explain advantages and disadvantages of using Evolutionary Model of software development. Also Discuss its applicability. This model is useful for projects using new technology that is not well understood. Advantages: In evolutionary model, a user gets a chance to experiment partially developed system. It reduces the error because the core modules get tested thoroughly. Disadvantages: Sometimes it is hard to divide the problem into several versions that would be acceptable to the customer which can be incrementally implemented and delivered.	5	1	4/M
	OR			
	Compare RAD model with Prototyping Model, Iterative waterfall model and Evolutionary Model. Prototype model is a software development model where a prototype is built, tested and then refined as per customer needs.Rad model is a software development model where by the components or functions are developed in parallel as if they were mini projects. In an iterative waterfall model, you might use the iterations more for refinement/elaboration of elements of the overall design in multiple phases of [detailed design / build / test]. In theory, you could plan most of the iterations in advance. In a true evolutionary model you would not have an overall design - you'd just be adding to whatever you have already built based on some notion of what is most valuable to do next, typically gained through intensive user feedback. You wouldn't have a fixed plan for future iterations			

Section-C

Attempt all the questions of this Section			(10X2=20)	

Q. No.	Question	Marks	CO	BL/KC*
6	Draw the neat sketch of spiral model and explain its different activities. Also discuss its advantages and disadvantages. Plan, analyze risk, develop, assess. Advantages of Spiral Model: 1. Software is produced early in the software life cycle. 2. Risk handling is one of important advantages of the Spiral model, it is best development model to follow due to the risk analysis and risk handling at every phase. 3. Flexibility in requirements. In this model, we can easily change requirements at later phases and can be incorporated accurately. Also, additional Functionality can be added at a later date. 4. It is good for large and complex projects. Disadvantages of Spiral Model: 1. It is not suitable for small projects as it is expensive. 2. It is much more complex than other SDLC models. Process is complex. 3. Too much dependable on Risk Analysis and requires highly specific expertise. 4. Difficulty in time management. As the number of phases is unknown at the start of the project, so time estimation is very difficult.	10	1	3/C
	OR			
	What is Software quality? What are the three dimensions of software quality? Explain. 3 dimensions: Product operation, product revision and product transition. Software quality is conformance to: Explicitly Stated Functional And Performance Requirements Explicitly Documented Development Standards ,Implicit Characteristics			
7	Explain feasibility study and its types in detail? What is the outcome of this activity? Does it have any implicit or explicit effect on Requirement analysis and gathering Phase? The outcome of the Feasibility Study is a confirmed solution for implementation. Types: technical, financial, schedule, organizational. It helps organizations determine whether the technical resources meet capacity and whether the technical team is capable of converting the ideas into working systems. Technical feasibility also involves the evaluation of the hardware, software, and other technical requirements of the proposed system	10	2	5/M

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	What do you understand by inconsistencies, anomalies, and incompleteness in an SRS document? Explain with suitable example. Also identify inconsistencies, anomalies, and incompleteness in the following requirements of ***Academic Activity Automation Software of an educational institute***: *"The Semester performance of each student is computed as the average academic performance for the semester. The guardians of all students having poor performance record in the semester are mailed a letter about the poor performance of the ward and intimating that repetition of poor performance in the subsequent semester can lead to expulsion. The extracurricular activities of students are also graded and taken into consideration for determination of semester performance"*			

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