KIIT Deemed to be University
Online End Semester Examination(Spring Semester-2021)

Subject Name & Code: SE(IT-3044) **Applicable to Courses:**

Full Marks=50 **Time:2 Hours**

SECTION-A(Answer All Questions. Each question carries 2 Marks)

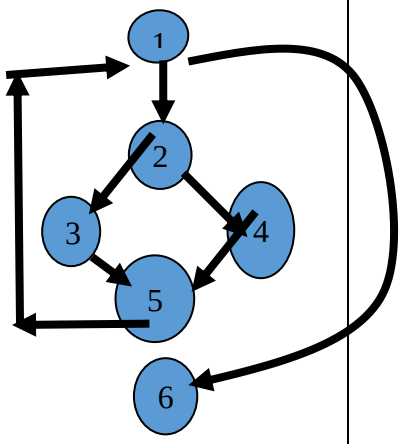
Time:30 Minutes **(7×2=14 Marks)**

Question No	Question Type (MCQ/SAT)	Question	CO Mapping	Answer Key (For MCQ Questions only)
Q.No:1	MCQ	1.Which SDLC model is suitable for projects where 'user requirements' and 'technical aspects' are not well understood a) Spiral model b) Agile model c) Evolutionary model d) Prototype model	CO1	d
	MCQ	2.How many loops are there in Spiral model a)1 b)2 c)4 d)None of the above	CO1	d
	MCQ	3.When is a Sprint Retrospective ceremony performed? a. Whenever the team suggests b. At the end of each Sprint c. Whenever the Product Owner suggests	CO1	b

		d. Whenever the Scrum Master suggests		
	MCQ	4.What does a Burn down Chart display**?** a. Project Progress b. Amount of remaining work with respect to time c. The velocity of the team d. The capacity of the team members	CO1	b
Q.No:2	**MCQ**	1. Which of the following is not defined in a good SRS document a)Functional requirement b)Non-functional requirement c)Goals of implementation d)Algorithm for software implementation	CO2	d
	MCQ	2. Which of the below is not a requirement gathering technique? a. Prototyping b. Spiralling c. Interviews d. Brainstorming	CO2	b
	MCQ	3. Which of the below is not a non-functional requirement? a. Performance b. Security c. Search d. Portability	CO2	c

	MCQ	4. The SRS is said to be *consistent* if and only if a) its structure and style are such that any changes to the requirements can be made easily while retaining the style and structure b) every requirement stated therein is one that the software shall meet c) every requirement stated therein is verifiable d) no subset of individual requirements described in it conflict with each other	CO2	d
Q.No:3	**MCQ**	**1.** The first step in Project planning is to a. determine the project constraints b. determine the budget c. establish the objectives and scope d. select a team organization model	CO3	c
	MCQ	**2.** FP (Function point) based estimation techniques require problem decomposition based on a. information domain values b. project schedule c. software functions d. process activities	CO3	a
	MCQ	**3.** The size of a project is estimated to be 32000DSI.The effort	CO3	a

		calculated is 160 person-month and schedule is 16 months than what would be the average staffing in persons a. 10 b. 20 c. 30 d. 11		
	MCQ	4. Software project estimation techniques can be broadly classified under which of the following heading a. empirical models and automated process b. empirical model and decomposition technique c. decomposition technique and regression models d. regression models and automated process	CO3	b
Q.No:4	**MCQ**	.1. A class is divided into which of these categories a)name, attribute and operation b)name, data member and member function c) Both a and b d) None of the above	CO4	c
	MCQ	. 2. If you want to plan project activities such as developing new functionalities and test cases, which of the following OOAD UML artifacts is the most useful. a)UseCase diagram b)Sequence diagram c)Class diagram d)Activity diagram	CO4	a
	MCQ	3. In Temporal cohesion, which one is correct? Select one a)All elements of the module perform similar operations b) All elements of the module perform different operations c) All the tasks must be executed in the same time span.	CO4	c

		d) None of the above		
	MCQ	4. Degree of coupling is maximum in a)content coupling b)data coupling c)control coupling d)stamp coupling	CO4	a
Q.No:5	**MCQ**	1. Data flow based testing is type of a)Black box testing b)White box testing c) Grey box testing d)None of the above	CO5	b
	MCQ	2. What would be the Cyclomatic complexity for the below CFG (control flow graph)?  a. 2 b. 3 c. 4 d. 5	CO5	b
	MCQ	3. Boundary value analysis is	CO5	a

		part of which type of testing. a)Black box testing b)White box testing c) Grey box testing d)None of the above		
	MCQ	4. If x > y max = x else max = x Test Suite data below to test the above code. {(x=3,y=2);(x=4,y=3); (x=5,y=1)}. Is the test suite sufficient to test the code? a. True b. False	CO5	b
Q.No:6	**MCQ**	1. Which of the following provide useful measures of software quality? a. correctness, performance, integrity, usability b. reliability, maintainability, integrity, sales c. correctness, maintainability, integrity, usability d. correctness, maintainability, integrity, performance	CO6	c
	MCQ	2. If a software production gets behind schedule, one can add more programmers and catch up a) True b) False	CO6	b
	MCQ	3.Which one of these processes is not a part of CMMI a)Repeatable b)Managed c)Defined d)Traceability	CO6	d
	MCQ	4. ISO 9001 correspond to	CO6	c

		a)CMMI level 1 b) CMMI level 2 c) CMMI level 3 d) CMMI level 4		
Q.No:7	**MCQ**	1. Which is a software configuration management concept that helps us to control change without seriously impeding justifiable change? a. Baselines b. Source code c. Data model d. All of the above	CO6	a
	MCQ	2. Which of the following is not considered as a risk in project management? a. Product competition b. Testing c. Staff turnover d. Specification delays	CO6	b
	MCQ	3. Stamp coupling is a)When two modules communicate via an elementary data item b)When two modules communicate via a composite data item c)When two modules share some global data d)when two modules share code	CO4	b
	MCQ	4. What are the two strategies in structured design that transform a DFD into a structure chart a)transform analysis and structure analysis b)transform analysis and transaction analysis	CO4	b

		c)transform analysis and factoring analysis d)none of the above		

SECTION-B(Answer Any Three Questions. Each Question carries 12 Marks)

Time: 1 Hour and 30 Minutes **(3×12=36 Marks)**

Question No	Question	CO Mapping (Each question should be from the same CO(s))
Q.No:8	1. What is SCRUM, what are SCRUM values, frameworks and roles	CO1
	2. Explain an Iterative waterfall model, write how it is different from classical waterfall model. Mention the advantages and disadvantages of waterfall model.	
	3. Do a comparison study of waterfall and Agile methodology	
Q.No:9	1. Explain in detail what are the steps involved in requirement gathering and analysis. Explain the difference between inconsistent and incomplete requirement with examples.	CO2
	2. What are the properties of a good SRS document? Explain about different types of requirement with examples along with the constraints.	
	3. i. What you mean by Decision Tree and Decision table. ii. Lets say you are gathering requirement for a new online application for auto	

	insurance for new, renewal, cancel category. Represent the above requirement in terms of decision tree.	
Q.No:10	1. a. Two software managers separately estimated a given product to be of 10,000 and 15,000 lines of code respectively. Bring out the effort and schedule time implications of their estimation using COCOMO. For the effort estimation, use a coefficient value of 3.2 and exponent value of 1.05. For the schedule time estimation, the similar values are 2.5 and 0.38 respectively. Assume all adjustment multipliers to be equal to unity. b. Explain with diagrams how effort varies with size of the product and how development time varies with size.	CO3
	2. a. Explain in detail, how risks are handled in a project with examples. b. Consider a software project with 5 tasks T1–T5. Duration of the 5 tasks in weeks are 5,2,5,7,2 respectively. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. A T5 can start when both T3 and T4 are complete. Draw the CPM activity network representation of the project. When is the latest start date of the task T3. What is the slack time of the task T4. Which tasks are on the critical path?	

	3. a. What is a Pert chart and what is the use of Pert chart. Please explain with a diagram. b. What are called “Free floats” and “Total floats”? How are they calculated? Draw a network diagram representing the following logic: As the project starts, activities A and B can be performed concurrently. When A is finished, activities C and D can start. When B is finished, activities E and F can start. When activities D and E are finished, activity G can start. The project is complete when activities C, F and G are finished.	
Q.No:11	1. a. What is cohesion and coupling? Explain the difference between them. State what would be the best design approach and why in terms of cohesion and coupling. b.Draw a use case diagram for an online shopping application with your own assumption.	
	2. a. What is Functional oriented design and what is object oriented design. Explain in detail with examples. Explain the difference between them. b. Draw a sequence diagram for an online shopping application with your own assumption.	
	3. a. What is DFD(data flow diagram). What are the different types, components, levels of DFD. Draw a DFD 0 and 1 level diagram for a food delivery application with your own assumption.	