Sample Question Format
(For all courses having end semester Full Mark=50)

KIIT Deemed to be University
Online End Semester Examination(Autumn Semester-2020)

Software Engineering – IT 3003 **BTecch CSE & IT**

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		Which software model is used to develop Enterprise application in Healthcare domain ? justify.	CO1	
		Which Software Models put emphasis on risk handling ? How?	CO1	
		What are the roles in scrum? Is there any team lead? What are his responsibilities?	CO1	
		What is pair programming ? what are its benefits?	CO1	
Q.No:2		What are the different Requirement Gathering techniques used in Software engineering ?	CO2	
		What is reverse engineering? What is it's role in Requirement Gathering ?	CO2	
		How to measure project complexity for improved decision making?	CO2	
		"If the phase containment of errors	CO2	

		principle is not followed during software development, then development cost would increase".TRUE/FALSE justify.		
Q.No:3		What are the factors contributing to the complexity of managing a software project ?	CO3	
		What are the major responsibilities of a Software project manager ?	CO3	
		What is empirical project estimation Technique ?	CO3	
		Why Work Breakdown Structure is used in Scheduling ?	CO3	
Q.No:4		How does coupling contribute to software design ?	CO4	
		When do we use Object Oriented Software Design ?	CO4	
		How does Abstraction & decomposition help the Software Design ?	CO4	
		What is component based user interface development ? When do we use it ?	CO4	
Q.No:5		What do you understand by positive and negative test cases ? give an example.	CO5	
		What is test scenario and test case?	CO5	
		What will happen if we test the whole software directly?	CO5	
		What is the difference between Code inspection and code walk through ?	CO5	
Q.No:6		what is a quality	CO6	

		software ? what are different quality standards used for software ?		
		What is reliability ? Write the metrics used for measuring reliability?	CO6	
		what is meant by software reuse ? What are the advantages of reuse ?	CO6	
		What problems you would encounter while maintaining a legacy product ?	CO6	
Q.No:7		Component based development reduces development time, cost and improves quality. Justify.	CO6	
		What is the difference between SOA & SaaS ?	CO6	
		How does quality control differ from quality assurance?	CO6	
		What is process metrics & product metrics ?	CO6	

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	A. What are the major advantages of first constructing a working prototype before starting to develop the actual software ? What are the disadvantages of this approach?	CO1

	B. Based on the following information that Time is limited, proper domain knowledge, average technical skill. which development would you like to consider ? Explain with example. C. Being the Project Manager of a project , how do you adopt SCRUM framework within your Team. Explain with an example	
	A. How agile SDLCs claim reduction in development time and cost ? Are there any pitfalls in achieving this ? Discuss with an example. B. If you could create a completely new model without any flaws, what would its features and characteristics be? How would it overcome the flaws that are present in the already existing C. Exploratory style of software development is highly appreciated for very small programs and not for professional software. Discuss the shortcomings of the exploratory style of development.	
	A. What is software crisis ? What are its symptoms, causes and possible solutions? Explain in detail by considering a Crisis scenario. B. XYZ is an multinational software house. XYZ is currently working on a project that is totally new for the development team and even the client is confused about the	

	requirements of this project. Hence this company is facing difficulties because they fail to apprehend user requirements properly. For this project, it is decided to build a sample application and show it to the client for feedback.In the context of this above scenario as a project manager what will be the choice of the software lifecycle model? C. What is RAD SDLC? How does it accommodate change requests late in the development and help faster software development? Explain with a suitable example.	
Q.No:9	A. Suppose the analyst of a large product development company has prepared the SRS document in the form of a narrative essay of the system to be developed. Based on this document the product development activity gets underway. Explain the problems that such a requirements specification document may create while developing the software. B. What do you understand by the term functional independence in the context of software design ? What are the advantages of functional independence ? How can functional independence in a software design be achieved ? C. Why should technical writers be involved with	CO2

	SRS ? What kind of information should an SRS include? Who is responsible for SRS design ?	
	A. SRS document preparation is an integral part of the development process. Preparation of a good SRS has always been a challenge. Identify at least four common problems in developing SRS document. B. What are the different relationships that may exist among classes of object-oriented design? C. What problems are arise if two modules have high coupling?	
	A. What is Non-Functional Requirements? What are different types of NFR ? give examples of NFR. B. How is the sequence diagram useful during software development? How is this diagram different from collaoration diagram? C. Compare the relative advantages of different types of menu for organizing user commands.	
Q.No:10	A. Why is it difficult to accurately estimate the effort required for completing a project ? Briefly explain any effort estimation method available. Which one is the most advisable to use and why ? B. Briefly explain the Heuristic estimation technique with a suitable	CO3,4

	example. C. A project was estimated to be 500 KLOC. Calculate the effort and development time for each of the three model i.e., organic, semi-detached & embedded.	
	A. What is Empirical estimation technique ? When is it preferred over Heuristic technique ? Explain with an example. B. What according to you characterizes a good software design? C. Design a network diagram. Identify critical path. Calculate total completion time. Estimate the Slack time of each activity for the following table : Activity-Predecessor – Duration A --- 6 B --- 4 C A 3 D B 4 E B 3 F ---- 10 G E, F 3 H C, D 2	
	A. Given the following values, compute function point when all complexity adjustment factor (CAF) and weighting factors are average. User Input = 40 User Output = 50	

	User Inquiriess = 40 User File = 6 External Interface = 5 B. What is a risk ? What are the essential activities to manage risk ? Explain Each activity in detail. C.In a software development company, whose responsibility is to ensure that the software is of high quality ? Explain the major tasks they perform to meet the responsibility.	
Q.No:11	A. Design Use-case and activity diagram for the following problem statement. **Problem statement :** Applying for an internship to a company through T&P cell. Any assumptions can be to complete the design. Elaborate the problem statement as per your understanding & design. B. What is code review ? Why it is important insoftware development? What are different code review techniques used? Explain in detail. C. Why is there need to document a software development process?	CO5,6
	A. What do you mean by balancing a DFD? Design a DFD till 2nd level for the following problem statement. **Problem statement :** Applying for an internship to a company through T&P cell. Any assumptions can be to complete the design. Elaborate the problem statement as per	

	your understanding & design. B. What is integration Testing ? How is the integration testing conducted using Stubs & Drivers ? Explain with a suitable example. C. How does SOA help in software development? Write its challenges.	
	A. Design Use-case and activity diagram for the following problem statement. **Problem statement :** KIIT University organises Kiit Premiere League [KPL]- Inter University Cricket tournament every year. Any University wants to participate in KPL has to register, provide player and official list, travel plan and other necessary information. The university confirms their participation, share KPL schedule, provide Accommodation, arrange food and internal transportation. Elaborate the problem statement as per your understanding & design. B. What is software re-engineering ? When this will be preferred? C. What is path coverage based testing ?Explain Context Flow Diagram with a suitable example. what is McCabe's cyclomatic complexity? How does it help in path testing?	