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 ?	CO1	
		What is SCRUM ? What are SCRUM artifacts ?	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	
		What are the different stages in Requirement Gathering?	CO2	
		Who is responsible for Requirement Gathering and why ?	CO2	
Q.No:3		What are the factors contributing to the complexity of managing a software	CO3	

		project ?		
		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 is test suite and test script?	CO5	
		What is the difference between Code inspection and code walk through ?	CO5	
Q.No:6		what is a quality software ? what are different quality standards in software ?	CO6	
		What is reliability ? What is the difference between reliability and availability?	CO6	
		what is meant by	CO6	

		software reuse ? What are the advantages of reuse ?		
		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	
		The use of CASE tools are becoming indispensible for large software projects. Justify .	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? 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.	CO1

	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. Extreme Programming development framework claims risk reduction and improved quality. How does Risk reduction and quality improvement is achieved in XP ? Explain with a suitable example. 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.	
	A. What is software crisis ? What are its symptoms, causes and possible solutions? Explain in detail by considering a Crisis scenario. B. Software development style has evolved from an esoteric Art form to an exoteric craft form and then has emerged as an Engineering discipline. Illustrate this with a suitable example. 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.	
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. 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. C. Why should technical writers be involved with SRS ? What kind of information should an SRS include? Who is responsible for SRS design ?	CO2
	A. 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 ? B. What is Functional Requirement Specification[FRS] ? what are the benefits of a FRS ? provide a documentation template of a FRS. C. What is Non-Functional Requirements? What are different types of NFR ? give examples of NFR	

	A. What is requirement elicitation ? what are the different elicitation techniques used for development of an Enterprise solution foa any FMCG enterprise ? B. What is requirement analysis ? why it is needed ? Explain with a suitable example. C. Design a draft template for requirement elicitation . Any assumptions can be made to accomplish the task.	
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 example. C. What is Empirical estimation technique ? When is it preferred over Heuristic technique ? Explain with an example.	$CO_{3,4}$
	A. 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. B. 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 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. What is purpose of staffing management plan Software Project Management ? Discuss any staffing estimation model. B. What is a risk ? What are the essential activities to manage risk ? Explain Each activity in detail. C. What is Software Configuration Management ? Why it is necessary for SPM ? Explain different configuration management activities.	
Q.No:11	A. Design Use-case and activity diagram for the following problem statement. **Problem statement :** Applying	$CO_{5,6}$

	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 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. C 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.	
	A. What is code review ? Why it is important insoftware development? What are different code review techniques used? Explain in detail.	

	B. What is Unit Testing ? How is the Unit testing conducted using Stubs & Drivers ? Explain with a suitable example. C. What is coverage based testing ? what are different types ? Explain Context Flow Diagram with a suitable example.	
	A. What is software reliability ? How to measure the reliability of a software ? What is reliability growth modelling ? Explain. B. Discuss in detail, all the quality attributes of a software. What are the quality standards used in software ? 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.	