



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

**Subject Name & Code:** SE(IT-3003 )  
**ECS**

**Applicable to Courses:** B.Tech

**Full Marks=50**

**Time:2 Hours**

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

**Time:30 Minutes**

**(7×2=14 Marks)**

<b><u>Question No</u></b>	<b><u>Question Type (MCQ/SAT)</u></b>	<b><u>Question</u></b>	<b><u>CO Mapping</u></b>	<b><u>Answer Key (For MCQ Questions only)</u></b>
<b><u>Q.No:1</u></b>	<b><u>MCQ</u></b>	Q1.Which of the following is the Characteristics of good software? A. Transitional B. Operational C. Maintenance D. All of the above	CO1	KEY: D
	<b><u>MCQ</u></b>	Q2.Identify the correct statement: “Software engineers shall A. act in a manner that is in the best interests of his expertise and favour.” B. act consistently with the public interest.” C. ensure that their products only meet the SRS.” D. all of the mentioned	CO1	KEY: B
	<b><u>MCQ</u></b>	Q3.The process of developing a software product using software engineering principles and methods is referred to as A. Software Engineering B. software Evolution C. System Models D. Software Models	CO1	KEY: B
	<b><u>MCQ</u></b>	Q4. Where there is a need of Software Engineering?	CO1	KEY:D

		A. For Large Software B. To reduce Cost C. Software Quality Management D. All of the above		
<b><u>Q.No:2</u></b>	<b><u>MCQ</u></b>	Q1.Which of the following is not a phase of SDLC? A. Requirement gathering B. Maintenance C. Installation D. Testing	CO1,CO2	KEY:C
	<b><u>MCQ</u></b>	Q2.Selection of particular life cycle model is based on, A. Requirements B. Technical knowledge of development team C. Users D. All of the above	CO1	KEY:D
	<b><u>MCQ</u></b>	Q2.Regression testing is a major part of which of the life cycle? A. Waterfall model B. V model C. Iterative model D. All of the above	CO1,CO3	KEY:C
	<b><u>MCQ</u></b>	Q4.Which of the following are not type of SDLC models? A. Big bang model B. Agile model C. Spiral model D. Capability Maturity model	CO1,CO4	KEY:D
<b><u>Q.No:3</u></b>	<b><u>MCQ</u></b>	Q1. The process to gather the software requirements from client, analyze and document them is known as  A. Feasibility Study B. Requirement Gathering C. Requirement Engineering D. System Requirements Specification	CO3	KEY:C
	<b><u>MCQ</u></b>	Q2. It is the process in which developers discuss with the client and end users and know their expectations from the software.	CO3	KEY:A

		A.Requirements gathering B. Organizing Requirements C. Negotiation & discussion D. Documentation		
	<b><u>MCQ</u></b>	Q3. Which one is a functional requirement? A. Security B. Data integrity C. Through put D. None of the above	CO3	KEY:D
	<b><u>MCQ</u></b>	Q4. Which of the following property does not correspond to a good Software Requirements Specification (SRS) ?  A. Verifiable B. Ambiguous C. Complete D. Traceable	CO3	KEY:B
<b><u>Q.No:4</u></b>	<b><u>MCQ</u></b>	Q1.What is Cyclomatic complexity? a) Black box testing b) White box testing c) Yellow box testing d) Green box testing	CO4	KEY:B
	<b><u>MCQ</u></b>	Q2. White Box techniques are also classified as a) Design based testing b) Structural testing c) Error guessing technique d) None of the mentioned	CO4	KEY:B
	<b><u>MCQ</u></b>	Q3. Which term is used to define testing?  A. Evaluating deliverable to find errors B. Finding broken code C. A stage of all projects D. None of the above.	CO4	KEY:A
	<b><u>MCQ</u></b>	Q4.The order in which test levels are performed is:  A. Unit, Integration, Acceptance, System B. Unit, System, Integration, Acceptance	CO4	KEY:D

		C. Unit, Integration, System, Acceptance D. It depends on the nature of a project		
<b>Q.No:5</b>	<b><u>MCQ</u></b>	Q1. Which one is a set of activities which are networked in an order and aimed towards achieving the goals of a project.  A. Project B. Process C. Project management D. Project cycle	CO5	KEY:A
	<b><u>MCQ</u></b>	Q2. Which of the followings are the responsibilities of the project manager.  A Budgeting and cost control B. Allocating resources C. Tracking project expenditure D. All of the above	CO5	KEY:D
	<b><u>MCQ</u></b>	Q3.Five dimensions that must be managed on a project  A. Constraint, Quality, Cost, Schedule, Staff B. Features, Quality, Cost, Schedule, Staff C. Features, priority, Cost, Schedule, Staff D. Features, Quality, Cost, Schedule, customer	CO5	KEY:B
	<b><u>MCQ</u></b>	Q4.“Risk” is usually _____ as the project progresses. A. increases B. reduces C. remains same D. becomes negligible	CO5	KEY:B

<b><u>Q.No:6</u></b>	<b><u>MCQ</u></b>	<p>Q1.If P is risk probability, L is loss, then Risk Exposure (RE) is computed as_____ .</p> <p>A. <math>RE = P/L</math></p> <p>B. <math>RE = P + L</math></p> <p>C. <math>RE = P*L</math></p> <p>D. <math>RE = 2* P *L</math></p>	CO5	KEY:C
	<b><u>MCQ</u></b>	<p>Q2. Abbreviate the term PERT.</p> <p>A.Program Evolution &amp; Review Technique</p> <p>B. Process Evolution &amp; Review Tool</p> <p>C. Project Evaluation &amp; Request Technique</p> <p>D. None of the above</p>	CO5,	KEY:A
	<b><u>MCQ</u></b>	<p>Q3.Which of the following is a project scheduling method that can be applied to software development?</p> <p>A. PERT</p> <p>B. CPM</p> <p>C. CMM</p> <p>D. Both PERT and CPM</p>	CO5	KEY:D
	<b><u>MCQ</u></b>	<p>Q4.Which of the following is/are true with respect to functions ?</p> <p>A. A function such as “search-book” is represented using a circle</p> <p>B. Functions represent some activity</p> <p>C.Function symbol is known as a process symbol or a bubble in DFD</p> <p>D.All of the mentioned</p>	CO3,CO6	KEY:D
<b><u>Q.No:7</u></b>		<p>Q1. What is MTTF ?</p> <p>A.Maximum time to failure</p> <p>B. Mean time to failure</p> <p>C.Minimum time to failure</p> <p>D. None of the above</p>	CO4,CO6	KEY:B

		mentioned		
		Q2.The CMM model is a technique to A. automatically maintain the software reliability B. improve the software process. C. test the software D. all of the above mentioned	Co4,CO6	KEY:B
		Q3. A group of people working with common objectives or goals is known as a _____ A. Team B. Teamwork C. Group D. Club	CO6	KEY:A
		Q7.Which of the following is not a benefit of teamwork? A. Improved solutions to quality problems B. Improved ownership of solutions C.Improved communications D. Decline in integration	C)6	KEY:D

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

**Time: 1 Hour and 30 Minutes**

**(3×12=36 Marks)**

<b><u>Question No</u></b>	<b><u>Question</u></b>	<b><u>CO Mapping (Each question should be from the same CO(s))</u></b>
<b><u>Q.No:8</u></b>	Q1.(a)Which life cycle model would you follow for developing software the following applications.Justify.	CO1,CO4

Software project responding to user change and should be completed in a month. [6 marks]

(b) A small project consisting of eight activities has the following characteristics:

**Time – Estimates (in weeks)**

<i>Activity</i>	<i>Preceding activity</i>	<i>Most optimistic time (a)</i>	<i>Most likely time (m)</i>	<i>Most Pessimistic time (b)</i>
A	None	2	4	12
B	None	10	12	26
C	A	8	9	10
D	A	10	15	20
E	A	7	7.5	11
F	B,C	9	9	9
G	D	3	3.5	7
H	E, F, G	5	5	5

(i) Draw the PERT network for the project.[2marks]

(ii) Prepare the activity schedule for the project.[2 marks]

(iii) Determine the critical path.[2marks]

Q2. Explain any 4 testing methods in details.[4X3 marks]

Q3.(a)What do you mean by debugging? Explain all the debugging approaches .[8 marks]

(b) what do you mean by stub and driver in unit testing? Explain. [4marks]

**Q.No:9**

Q1.(a)What do you understand by Key Process Area (KPA), in the context of SEI CMM? Would an organization encounter any problems, if it tries to implement higher level SEI CMM KPAs before achieving the lower level KPAs? Justify your answer.[4 marks]

(b) Differentiate between SEI CMM Model and ISO 9000.[4 marks]

(c) What is Reverse Engineering? Explain the different activities undertaken during reverse engineering.Give an Scenario where you can apply reverse engineering. [4 marks]

Q2.Explain the concept of Control flow graph? Draw the control graph and calculate cyclomatic complexity for the following program segment.[4+6+2 marks]

CO5,CO6

	<pre> insertion_procedure ( int a[], int p [], int n) {     int i,j,k;     for ((2a)i= 0 ; (2b)i&lt;=n; (2c)i++)         p[i] = i;     for ((4a)i= 2 ; (4b)i&lt;=n; (4c)i++)     {         k=p[i];j= 1 ;         while (a[p[j- 1 ]] &gt; a[k]) {             p[j] = p[j- 1 ];             j--;         }         p[j] = k;     } } </pre>	
	<p>Q3. What is software reliability ? Describe software vs hardware reliability.Summarize the reliability metrics in details.[2+4+6 marks]</p>	
<b><u>Q.No:10</u></b>	<p>Q1.(a) Draw activity network for renewal of books in a library. [5 marks]  (b) Draw context level , level1 and level2 DFD for a Student information system.[1+3+3 marks]</p> <p>Q2.(a) What is Use case? Draw use case diagram for an ATM. [2+ 4 marks]  (b) Draw a sequence diagram for withdraw cash from a bank.[6 marks]</p> <p>Q3. what do you mean by cohesion and coupling? Explain 4 cohesion and 4 coupling with examples. [2+4+4 marks]</p>	CO3,CO5
<b><u>Q.No:11</u></b>	<p>Q1. What do you mean by SRS? Write 4 functional and 3 non function requirements for Library Management System.[1+8+3 marks]</p> <p>Q2.(a)List important advantages and disadvantages of of command language interface.[4 marks]  (b) Explain different types of client server architectures.[6 marks]</p> <p>Q3.(a) Summarize the types software maintenance and it causes[6 marks]  (b) Explain the quality factors for a software product.How to ensure product quality &amp; process quality ?[2+4 marks]</p>	CO2.CO6