School of Computing Science and Engineering

B.Tech CSE
ETE - Jun 2023

Time : 3 Hours **Marks : 100**

Sem IV - E1UJ401B/BSCS2440
Software Engineering
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1.	Explain the process of requirement engineering with a suitable diagram.	K3 CO1 ,CO2	(5)
2.	Define software project planning. Explain the structure of a software project plan.	K2 CO1 ,CO2	(5)
3.	Enumerate the characteric features of software. Justify the statement "Software Engineering is science as well as art".	K1 CO2 ,CO1	(5)
4.	Suppose you are developing and Student Result Management System for a university. Write down the following: (a) One business requirement (b) Two functional requirements (c) Two non-functional requirements	K2 CO4 ,CO3	(10)
5.	Describe the V & V model for software development using suitable diagram. Explain the characteristics of of this model which make it suitable for long term projects.	K4 CO4 ,CO3	(10)
6)	Explain equivalence class partitioning as black box testing technique. Write the test cases using equivalence class partitioning for finding the real roots of a quadratic equation. The range for the two roots is [1-20].	K4 CO3 ,CO4	(10)

OR

	Explain unit testing and integration testing in detail. Does unit testing involve black box testing or white box testing or both? Give reasons in support of your answer.	K4 CO4 ,CO3	(10)
7.	Explain the basic COCOMO model of software cost estimation. Hence calculate the effort, development time and no of persons required for an online banking application with 10KDLOC code.	K1 CO1 ,CO2	(10)
8.	Differentiate between data flow diagram and flow chart. Draw the Level 0 and Level 1 data flow diagram for a Student Result Management System.	K3 CO3 ,CO4	(15)
9)	(a) Analyze the importance of software maintenance in software development. Why does this phase take the longest time to complete? (5) (b) Explain different types of software maintenance. (10)	K4 CO5	(15)

OR

	For the following code, construct the control flow graph and find out Cyclomatic Complexity Metric.
	Int com-pgcd(int x, int y) {
	1 while(x!=y) {
	2 if(x>y) then
	3 x=x-y;
	4 else y=y-x;
	5 }
	6 return x;
	}
		K4 CO5	(15)

10.	Explain the notations used in a use case diagram. Draw the use case diagram of a Library Management System.	K3 CO5	(15)