University Institute of Engineering & Technology

(Recognised Under Section 2(f) and 12B of UGC)

Kurukshetra University, Kurukshetra

Roll No. -

THEORY EXAMINATION – MAY 2019	
B.TECH (CSE)	SEMESTER – VI

TIME – 3 Hrs.

M.M. - 75

COURSE NO. - CSE-310

COURSE TITLE - SOFTWARE ENGINEERING

Note: All questions in Part-A and Part-B are compulsory. Attempt any four questions from Part-C selecting at least one from each unit.

PART-A (15 Marks)

Q. No. – 1 Answer the following questions. **15x1=15**

(i)	Describe the evolving role of software.
(ii)	What is the impact of software engineering on developing software.
(iii)	Mention at least two reasons as to why classical waterfall model can be considered impractical and can not be used in real projects.
(iv)	Identify the software development life cycle model in which project risk factor is considered.
(v)	Explain why is SRS necessary.
(vi)	What is the difference between review, walkthrough and inspection.
(vii)	FAST stands for ----------.
(viii)	What do you understand by requirement elicitation.
(ix)	Define coupling. And also mention that which is the most desirable form of coupling.
(x)	Define modularity. Also discuss the role of modularity in software design.
(xi)	Identify the difference between flow-chart and structure chart.
(xii)	Write the formula to compute the program volume of a software product according to Halstead's science metric. Write the formula to compute the mutation score in mutation testing.
(xiii)	Write the formula to compute the mutation score in mutation testing.
(xiv)	Define software re-engineering.
(xv)	Write the formula to compute the cyclomatic complexity of a program. And also mention who has developed the concept of cyclomatic complexity.

PART-B (20 Marks)

	UNIT-I	
2	What do you understand by software crisis.Explain the various reasons for software crisis. Why are CASE tools not normally able to control it.	5
	UNIT-II	
3	What is SEI-CMM in software engineering. What are the five levels of CMM. Explain them in brief.	5
	UNIT-III	
4	Explain how size oriented metrics differ from function oriented metrics. Discuss the pros and cons of each.	5
	UNIT-IV	
5	Define software maintenance. Is software maintenance is the part of SDLC. Describe the types of software maintenance. How software maintenance cost effect the overall software development cost.	5

PART-C (40 Marks)

	UNIT-I	
6: i)	List the advantages and limitations of involving a software engineer throughout the software development planning process.	5
ii)	Compare the iterative enhancement model and evolutionary process model.	5
7: i)	Discuss the prototype model. What is the effect of designing a prototype on the overall cost of the software project.	5
ii)	Explain the spiral model of software development. Also mention its limitations.	5
	UNIT-II	
8	What is the significance and use of requirement engineering. What are the problems in the formulation of requirements. What are the crucial process steps of requirement engineering. Explain them with the help of diagram.	10
9	Define software risk and risk management. Enlist the types of software risk. What are the objectives of risk management. Explain the risk management process with the help of diagram.	10
	UNIT-III	
10:i)	What is difference between coupling and cohesion. What problems are likely to arise if two modules have high coupling and low cohesion.	5
ii)	Distinguish the function oriented and object oriented design.	5
11	Explain the different categories of software development projects according to the COCOMO estimation model. Briefly describe the basic and complete COCOMO model. Suppose a software project of size 200KLOC is to be developed. Software development team has average experience on similar types of projects. The project schedule is not very tight. Calculate the nominal effort, development time, average staff size and productivity of the project.	10
	UNIT-IV	
12	Distinguish the functional testing and structural testing. How do you perform functionaltesting. Briefly explain the various techniques of functional testing. Illustrate these techniques by giving suitable example.	10
13	Differentiate following:	
	i) Top-down and bottom-up programming.	4
	ii) Alpha and Beta testing.	3
	iii) Development and regression testing.	3