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Department of Computer Science and Engineering

B.Sc. (Engineering) in CSE

Semester Final Examination 2019 (Jan-Jun)

Level: 3 | Semester: I | Credit: 3.0 | Course Code: CSE-305

Course Title: Software Engineering

Time: 03 Hours | Total Marks: 90

[NB: Figure on the right side indicates the mark for the respective question.]

SECTION-A

(Answer any three from the followings.)

1.	a)	How do you define software engineering? Briefly discuss the fundamental activities involved in software engineering.	2+3
	b)	Compare the working principles of the waterfall model and incremental development. Which one is best in what situation?	5+2
	c)	Write down the differences between plan-based and agile development.	3
2.	a)	Define software user system requirements. Briefly explain the functional and non-functional requirements with example.	2+4
	b)	Draw the *Use-Case* diagram of *Library Management System*.	4
	c)	Define software prototype. Explain the working principle of prototype development.	1+4
3.	a)	"There is no standard software engineering method"—Place your argument to justify this statement. Mention the name of different types of software applications.	3+2
	b)	Define alpha and beta testing. Discuss the differences between them.	2+3
	c)	What is acceptance testing? Write down different stages in the acceptance testing.	1+4
4.	a)	What do you know about MVC Architecture? Briefly discuss the architecture of web application using MVC patterns.	2+4
	b)	Briefly explain the working strategies in Host-target development.	5
	c)	What are the major drawbacks of agile methods in software maintenance?	4

SECTION-B

(Answer any three from the followings.)

1.	a)	How does a process improvement cycle work? measure, specification, change	5
	b)	Define user requirements and system requirements. What are the differences between them?	2+3
	c)	"Non-functional requirements sometimes create functional requirements". Justify this statement with example.	5
2.	a)	Illustrate and discuss the spiral views of the requirements engineering process.	6
	b)	Define system modeling. Draw a sequence diagram to show the information of a particular student in a *Student Information System.*	1+4
	c)	What are the differences between software validation and verification?	4
3.	a)	What do you know about layered architecture? Discuss and visualize the layered architecture of a Library Management System.	3+3
	b)	Define software testing. Write short notes on i) Unit testing and ii) System testing	1+2+2
	c)	What is software evolution? Briefly explain the change identification and evolution processes of a software.	1+3
4.	a)	Define Test-driven development. Briefly discuss the process of Test-driven development.	2+4
	b)	Briefly discuss the spiral software development model focussing on software evolution. verif operati	5
	c)	"Software process is not visible in incremental development". – Justify this statement.	4