Basavarajeswari Group of Institutions

2024 SCHEME

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

USN | | | | | | | | | | |

Course Code | M | M | C | 2 | 0 | 4 |

Second Semester MCA Degree Examinations, September 2025

SOFTWARE ENGINEERING

Duration: 3 hrs **Max. Marks: 100**

Note: ***1. Answer any* FIVE *full questions, choosing* ONE *full question from each module.***
2. Missing data, if any, may be suitably assumed

Q. No		*Question*	*Marks*	*(RBTL:CO: PI)*
		MODULE – 1		
1.	**a.**	Define software engineering. Explain software process activities in detail.	**10**	**(2:1:1.4.1)**
	b.	Explain the concept of a perspective process model and describe the different phases of the waterfall model with a neat diagram.	**10**	**(2:1:1.4.2)**
		(OR)		
2.	**a.**	What is agility? Explain extreme programming core practices.	**10**	**(2:1:1.4.1)**
	b.	Define specialized process model? Explain different phases in rational unified process model.	**10**	**(2:1:1.4.2)**
		MODULE – 2		
3.	**a.**	Explain the concept of requirement specification and describe various methods used to write requirement specifications in a Software Requirements Specification (SRS) document.	**10**	**(2:2:3.1.1)**
	b.	Explain the requirement engineering process and describe its key activities with the help of a diagram.	**10**	**(2:2:4.2.3)**
		(OR)		
4.	**a.**	Define requirement discovery. Explain different techniques / methods of requirement discovery.	**10**	**(2:2:3.1.4)**
	b.	What is requirement validation? Describe the different types of checks involved in the requirements validation process.	**10**	**(3:2:3.1.2)**
		MODULE – 3		
5.	**a.**	Define class diagrams in UML. Describe the different components of a class diagram and explain various relationships with notation and examples.	**10**	**(3:3:3.1.4)**
	b.	Explain the standard notations used in Data Flow Diagrams (DFDs) and describe how level-0 and level-1 DFDs are constructed for a cloth ordering system.	**10**	**(2:3:3.1.4)**
		(OR)		
6.	**a.**	Explain the software design process and describe its various stages in detail.	**10**	**(2:3:3.1.2)**
	b.	Explain the concept of a state chart diagram and describe its notations with a suitable example.	**10**	**(2:3:3.1.4)**

Note: (**RBTL - Revised Bloom's Taxonomy Level: CO - Course Outcome: PI - Performance Indicator)**

MODULE – 4

7.	**a.**	Explain the concept of white box testing and describe the different techniques used in it with suitable examples.	**10**	**(3:4:5.3.2)**
	b.	Describe the process of regression testing and explain different types of it.	**10**	**(2:4:5.3.2)**

(OR)

8.	**a.**	Describe the key differences between black box testing and white box testing.	**10**	**(2:4:5.3.4)**
	b.	Explain the concept of system testing. Describe its types and advantages.	**10**	**(3:4:5.3.4)**

MODULE – 5

9.	**a.**	Explain Software Quality Management (SQM) process with neat diagram and illustrate its different objectives.	**10**	**(3:5:6.4.4)**
	b.	Define program inspection in software engineering. Explain inspection checklists in identifying software defects.	**10**	**(3:5:6.4.3)**

(OR)

10.	**a.**	Describe software component analysis and explain its key stages with the help of a process diagram in the context of software quality assessment.	**10**	**(2:5:5.3.4)**
	b.	What is risk management? Explain risk management process in detail with neat diagram.	**10**	**(2:5:5.3.4)**

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