CBCS SCHEME
SRI SAIRAM COLLEGE OF ENGINEERING

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BIS714B

Seventh Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Software Quality Assurance

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define SQA. Summarize the main characteristics of the environment for which software quality assurance (SQA) methods were developed.	10	L2	CO3
	b.	Explain the main objectives of software quality assurance activities in a software project.	06	L2	CO3
	c.	Define the following terms : (i) Software (ii) Software errors (iii) Software faults (iv) Software failures	04	L1	CO3
		OR			
Q.2	a.	List nine causes of software errors and discuss any 3 in detail with suitable example.	10	L1 L2	CO3
	b.	Describe the key categories and associated factors in McCall's software quality model using an illustrative model tree diagram.	10	L2	CO3
		Module – 2			
Q.3	a.	List components of software project life cycle. Discuss review and software maintenance components in detail.	10	L2	CO2
	b.	List and describe software quality assurance infrastructure components that help in error prevention and process improvement.	10	L2	CO2
		OR			
Q.4	a.	List and explain the objectives of proposal draft review.	10	L2	CO2
	b.	Discuss the factors that affect the extent of the contract review.	04	L2	CO2
	c.	Describe the recommended avenues for implementing a major contract review.	06	L2	CO2
		Module – 3			
Q.5	a.	Describe the prototyping model with the help of a neat diagram. Also discuss its advantages and disadvantages.	08	L2	CO1
	b.	Identify and discuss three types of data used in the application model for measuring SQA defect removal effectiveness and cost.	06	L2	CO1
	c.	Define software testing and describe the key terms related to the formal operative characteristics of testing.	06	L1 L2	CO1

		OR			
Q.6	**a.**	Discuss the different stages of the top-down testing approach with help of a neat diagram.	**08**	**L2**	**CO1**
	b.	Explain black box and white box testing concepts with suitable examples. Also list their advantages and disadvantages.	**12**	**L1 L2**	**CO1**
		Module – 4			
Q.7	**a.**	Interpret the main components of project progress control and describe how each contribute to effective project management.	**10**	**L2**	**CO4**
	b.	Briefly discuss how computerized tools are used to control both risk management activities and project schedules during project execution.	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	Discuss the various categories of software development process metrics with suitable example.	**08**	**L2**	**CO4**
	b.	With neat diagram discuss the 4 stage process of defining software quality metrics.	**08**	**L2**	**CO4**
	c.	Define the concept of Help Desk (HD) services and describe three types of HD quality metrics with example.	**04**	**L1 L2**	**CO4**
		Module – 5			
Q.9	**a.**	Describe the steps involved in ISO 9000 – 3 certification process with neat diagram.	**10**	**L2**	**CO5**
	b.	With neat diagram discuss the structure of ISO/IEC 15504 process assessment model.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	Using Fishbone diagram illustrate and explain the architecture of IEEE/EIA Std 12207 software life cycle processes.	**10**	**L2**	**CO5**
	b.	State and explain the underlying concepts of verification and validation according to IEEE standard 1012 – 1998.	**10**	**L2**	**CO5**

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