(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

SECOND SEMESTER [BCA] MAY-JUNE, 2025

Paper Code: BCA-108T ***Subject: Software Engineering***

Time: 3 Hours ***Maximum Marks: 60***

Note: Attempt any Five questions including Q.No.1 which is compulsory. Internal choice is indicated.

Q1 Attempt any **Four** from the following **(4x5=20)**

a) What are the various requirement elicitation methods? Discuss FAST in brief.

b) What do you mean by Reverse Engineering? Explain.

c) Define Deliverables, Milestones, Metric, Measure and Measurement?

d) Differentiate between Verification and Validation.

e) Differentiate between Alpha Testing and Beta Testing.

f) Explain Halstead Software Science Measure for any five measures.

g) Why we are in perpetual software crises? Explain.

h) What do you mean by Total Quality Management (TQM)? Explain.

Q2. Movie-Time Cinemas wish to improve their customer service. They offer a ticket reservation system for their customers. Movie-Time Cinemas have several theatres that may have several stages. All stages have numbered seats only. The reservation system allows customers to reserve seats from a wished showing. Information of theatres, stages, and showings are received automatically from a Movie-Time Cinemas program system. All information exchange is automated. Based on the above scope design the following: Write your assumptions (if any). **(2x5=10)**

a) Use case diagram

b) Class Diagram

OR

Q3. Explain Agile Model in detail. What are the advantages and disadvantages of Agile Model? Compare and Contrast with Waterfall, Prototype and Spiral SDLC Models. **(10)**

Q4. a) Consider a project with 15 low external inputs, 10 high external outputs, 10 low internal logical files, 15 High external interface files, 10 average external enquiries. In addition to above, system requires Essential backup and recovery, Significant data communication capability; Designed code may be moderately reusable. Other complexity adjustment factors are treated as average. What are the unadjusted and adjusted function point counts? Refer the table below for Weighing Factors. **(5)**

Functional Units	Weighting factors		
	Low	Average	High
EI	3	4	6
EO	4	5	7
EQ	3	4	6
ILF	7	10	15
EIF	5	7	10

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b) Explain Cost Estimation Model - COCOMO in brief. **(5)**

OR

Q5 What is Software Metrics? Explain various types of Metrics- Product, Process and Project Metrics in brief. **(10)**

Q6 What is Quality in Software? How do determine the software quality assurance? Explain various SQA Activities to assure the Software Quality. **(10)**

OR

Q7 a) Define coupling and explain various types of coupling? Which one is best and why? **(5)**

b) What is CMM? How is it different from ISO 9000? **(5)**

Q8 Explain Path Testing with the code of finding largest of three numbers. Find cyclomatic complexity, also mention the independent paths and testcases derived. **(10)**

OR

Q9 a) Differentiate between White Box Testing and Black Box Testing with suitable examples. **(5)**

b) Explain the Maintenance Process and types of maintenance in brief. **(5)**

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