Exam Roll No. .....

END TERM EXAMINATION

FOURTH SEMESTER [BCA] MAY-JUNE, 2025

Paper Code: BCA 204 **Subject: Software Engineering**

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

Note: Attempt any five questions including Q.No. 1 which is compulsory. Assume missing data if any. Internal choice is indicated.

Q1 Attempt **any Five** Questions: **(5*4=20)**

(a) What is software crisis? Was Y2K a software crisis?

(b) What is software engineering? Is it an art, craft or a science? Discuss

(c) What is basic Cocomo model?

(d) Write short note on Data dictionary.

(e) What is System Development Life Cycle (SDLC). Explain its Phases

(f) What are the steps followed in testing?

(g) What is verification and validation

(h) Define FAST AND QFD.

Q2 (a) Define the term "Software engineering". Explain the major differences between software engineering and other traditional engineering disciplines. **(5)**

(b) What are the major phases in the water fall model and spiral model? Where is spiral model beneficial? **(5)**

OR

Q3 (a) Draw a DFD for borrowing a book in a library which is explained below: "A borrower can borrow a book if it is available else, he/she can reserve for the book if he/she so wishes. He/she can borrow a maximum of three books? **(5)**

(b) What is software requirements specification (SRS)? List out the advantages of SRS standards.
List five desirable characteristics of a good SRS document. **(5)**

Q4 (a) Explain the Walson & Felix model and compare with the SEL model. **(5)**

(b) Suppose that a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three modes i.e., organic, semidetached and embedded. **(5)**

Software Project	ab	bb	cb	db
Embedded	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Organic	3.6	1.20	2.5	0.32

OR

Q5 (a) What are various activities during software project planning? Describe any two software size estimation techniques. **(5)**

(b) Compute the function point value for a project with the following information domain characteristics. **(5)**
Number of user inputs = 30
Number of user outputs = 42

P.T.O.

Number of user enquiries = 08
Number of files = 07
of external interfaces = 6
Assume that all complexity adjustment values are moderate?
What are the unadjusted and adjusted function point counts?

UNIT-III

Q6 (a) What are the key components of quality management in software engineering? **(5)**

(b) What is design? Describe the difference between conceptual design and technical design? **(5)**

OR

Q7 (a) Define module coupling and explain different types of coupling. **(5)**

(b) Define the following terms: Objects, Message, Abstraction, Class, Inheritance and Polymorphism? **(5)**

Unit-IV

Q8 (a) What is software testing? Discuss the role of software testing during software life cycle and why is it so difficult? **(5)**

(b) What is re-engineering? Differentiate between re-engineering and new development. **(5)**

OR

Q9 (a) Defined the following terms: **(6)**
(i) Fault (ii) Failure (iii) Bug (iv) Mistake.

(b) What is software maintenance? Describe various categories of maintenance. Which category consumes maximum effort and why? **(4)**

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