

(UG547)

Roll No. ....

S.C.No.—2214402

**B.C.A. EXAMINATION, 2024**

(Fourth Semester)

(Main)

**SOFTWARE ENGINEERING**

**22BCA402**

*Time : 3 Hours*

*Maximum Marks : 80*

**Note :** Attempt *Five* questions in all. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) What do you mean by Software Prototyping ? 2
- (b) Differentiate between DFD and ER diagram. 2
- (c) What are characteristics of Software ? 2
- (d) Write principles of software design. 2

- (e) Differentiate testing and debugging. 2
- (f) What do you mean by Reverse Engineering ? 2
- (g) Why software maintenance is important ? 2
- (h) Define Unit Testing. 2

2. (a) What do you mean by Software Engineering ? Explain various phases and key challenges in software engineering. 8

- (b) Explain various categories of software. 8

3. Explain RAD model in detail with the help of a diagram. State its advantages and limitations. Also explain when to use RAD models. 16
4. Explain the concept of DFD in detail with the help of suitable example. Why should you draw both logical and physical DFD for

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systems ? What advantages is there for drawing a logical DFD before a physical DFD for a new information system ? **16**

5. (a) What is Software Coding ? What are its features ? Explain various code verification techniques. **8**

(b) Define software requirement. Explain various components of SRS. **8**

6. What is Software Testing Life-Cycle (STLC) ? What are the phases involved in STLC ? Explain different types of testing techniques in detail. <https://www.cbluonline.com> **16**

7. Write short notes on the following : **6,6,4**

- (i) Boundary value analysis
- (ii) Equivalence partitioning
- (iii) Selection of test cases.

8. What is Software Quality Assurance (SQA) ? Explain its principles, SQA methods and SQA activities in detail. **16**

9. Explain the following : **6,6,4**

- (i) Software Reuse
- (ii) Reverse Engineering
- (iii) Software Evolution.