

Exam. Code : 107206

Subject Code : 1727

**Bachelor of Computer Application (BCA) 6th Semester
Paper-II : SOFTWARE ENGINEERING**

Time Allowed—2 Hours] [Maximum Marks—75

Note :— Attempt any **FOUR** questions. All questions carry equal marks.

1. (a) What is life cycle of software development ? Explain different phases of software life cycle. 12
- (b) What do you mean by functional and non-functional requirements ? Give at least two examples of each type of requirement. 6.75
2. (a) What do you understand by Software Quality Assurance ? Also discuss the steps needed for Quality Assurance. 12
- (b) Explain prototype model in detail. Why is prototype necessary ? How does this approach save the cost and effort ? 6.75
3. (a) List some of the desirable characteristics of a good SRS document. Discuss the relative advantage of formal requirement specifications. List some important issues which an SRS must address. 10
- (b) What are the essential characteristics of software engineering ? Also explain various software components. 8.75

4. (a) What are size metrics ? How is the function point metric advantageous over the LOC metric ? Explain. 10
- (b) What are the different categories of software according to COCOMO estimation model ? Compute the nominal effort and development time for 1 million lines of code in semi detached software category. 8.75
5. (a) What is meant by modular design ? When and how should a modular design be implemented ? 10
- (b) Explain user acceptance testing. Discuss various types of user acceptance testing. Why is it necessary ? 8.75
6. (a) What are the various factors associated with cost estimation of a project ? Explain any cost estimation technique. 10
- (b) Point out important differences between the function-oriented and the object-oriented approaches to software design. Corroborate your answer through suitable examples. 8.75
7. (a) Draw the Data Flow Diagrams for this description starting from zero level. If missing, consider suitable data to complete the description.

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The university's academic departments submit initial data about courses, instructors, textbooks and projected enrollments to the bookstore on a TEXTBOOK MASTER LIST. The bookstore generates a FORM 17; PURCHASE ORDER, which is sent to publishing companies supplying textbooks. Book orders arrive at the bookstore accompanied by a PACKING SLIP, which is checked and verified by the receiving department. Students fill out a BOOK REQUEST FORM that includes course information. When they pay for their books the students are given a paper tape CASE REGISTER SALES RECEIPT. 12

- (b) What is white-box testing ? Explain the significance of cyclomatic complexity in white-box testing with the help of suitable example. 6.75

8. Write notes on the following :—

- (a) Rayleigh curve
(b) PDL and Logic/Algorithm design
(c) Verification and Validation. 6+6+6.75