A

(20123) Roll No. .....

B. Sc.(Hons.) (Com. Sc.)-V Sem.

NS-3375

B. Sc. (Hons.) Examination, Dec. 2022

COMPUTER SCIENCE

Software Engineering

(BHCS-502)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 3×5=15

1. Explain briefly the main components of software requirement specification.

2. Explain the purpose of computer aided software engineering (CASE) tools. What are the possible activities that can be automated with it ?

3. Explain the structure of software requirement document.

4. Describe the methods of risk identification.

5. Define Black Box testing.

Section-B
(Short Answer Type Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. 7½×2=15

6. Differentiate between functional and non-functional requirements of the software. What are the key components included in good SRS ?

7. Risk Management is very important task of Project Management. Why ? List the possible risks associated to the project with brief details.

8. Who should be involved in a requirement view ? Draw a process model to show how a requirements review might be organized.

Section-C
(Detailed Answer Type Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Using a schematic diagram and suitable example show the order in which the following are estimated in the COCOMO estimate technique : COST, Effort, Duration and Size.

10. Draw lablled DFD, context diagram and data dictionary for a student academic management software that has the following features :

- Subject registration
- Student registration to subject
- Marks awarded to the students
- Query the marks
- Print the report card
- Apply statistical measures to the marks.

11. Define the purpose of a USE case model. Model a USE case for the following scenario :

"A Bank receives several applications for Credit Card issuing (silver, gold, platinum). The card needs to set the credit limit which depends on different aspects like customer property, salary, buying capacity and loan status. In order to issue a credit card bank need to check the customers credit history. The bank can issue some future loan based on the type of card."

12. Define the function oriented matrices in respect to function point (FP) attributes, weight estimation for each FP, and computation of all FPs (Simple average and complex). For the following information compute the FP value assuming 12 programs are tested with average adjustment complexity (Table 1).

Table - 1

User Inputs	32
User Outputs	62
User Inquiries	22
Number of files	8
External Interfaces	2

13. Define structural modeling. Identify different classes and show the class diagram and UML diagram for the following scenario :

"In a software issue resolving system, which an issue or error ticket is created by someone and the issue is reproduced, it is identified, resolution is determined, issues are fixed and verified and ticket is closed if issue is resolved.