**Code No: 156FU** **R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**
**B. Tech III Year II Semester Examinations, July - 2023**
**SOFTWARE ENGINEERING**
**(Common to CSE(CS), CSE(N))**

**Time: 3 Hours** **Max. Marks: 75**

**Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.



## PART – A

**(25 Marks)**

1.a) What is a process framework in the context of software engineering? [2]
b) How does the changing nature of software impact the role of software in the modern world? [3]
c) What are the main steps in the requirements engineering process, and how do they support software development? [2]
d) How do system models aid in comprehending and representing various aspects of a software system during requirements engineering? [3]
e) What are the key steps in the design process? [2]
f) How does design quality impact software project success? [3]
g) What are the key differences between black-box testing and white-box testing? [2]
h) How do software metrics contribute to evaluating and improving software quality? [3]
i) What is the role of software measurement in assessing and improving software quality? [2]
j) What are the differences between reactive and proactive risk management in software development? [3]

## PART – B

**(50 Marks)**

2.a) How does the myth of software not requiring maintenance impact software engineering processes and sustainability?
b) What challenges arise when adding more developers without proper coordination and communication? [5+5]

**OR**

3.a) Why is recognizing the limitations of software development estimation important?
b) How does the adoption of a process framework like the Unified Process (UP) benefit software engineering projects? [5+5]

4.a) How does interface specification contribute to the requirements engineering process, and why is it crucial for the successful development of software systems?

b) What are the key characteristics of user requirements, and why are they important for effective software development? [5+5]

**OR**

5.a) How does structured methods aid in system modeling during the requirements engineering process, and what benefits do they offer?

b) What is the significance of the software requirements document in the requirements engineering process, and what key elements should it include? [5+5]

6.a) How does software architecture impact the design, development, maintenance, and evolution of a software system?

b) How do UML diagrams contribute to software design and communication? [5+5]

**OR**

7.a) What is the role of architectural styles and patterns in software design and development, and what are some commonly used ones?

b) What are the key considerations in data design for software development, and how does it impact software system success? [5+5]

8.a) How does a strategic testing approach ensure high-quality software products, and what are the key elements of a testing strategy?

b) How does validation testing ensure software meets user expectations and requirements? [5+5]

**OR**

9.a) How does debugging contribute to software development and testing, and what are some effective techniques?

b) What are the key metrics in software maintenance, and how do they improve maintenance quality? [5+5]

10.a) How do software quality metrics contribute to improving the software development process?

b) Steps in effective risk management in software development, including risk identification, projection, refinement, and development of a RMMM plan. [5+5]

**OR**

11.a) How does software quality assurance contribute to high-quality software products?

b) ISO 9000 quality standards and their impact on software quality management? [5+5]

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