

**2024**  
**B.A./B.Sc.**  
**Fourth Semester**  
 CORE – 9  
**COMPUTER SCIENCE**  
*Course Code: CSC 4.21*  
 (Software Engineering)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. (a) Define software engineering. Why do we need software engineering?  
1+5=6
- (b) Briefly discuss the tools, method, and process in layered technology.  
3
- (c) Write a note on any one of software process model with an illustration.  
5
2. (a) What is meant by SDLC? Describe all the stages of SDLC. 1+7=8
- (b) What is CMM in software engineering? State and explain the five levels of CMM. 1+5=6

**UNIT-II**

3. (a) What do you understand by requirements engineering process (REP)? Write the benefits and drawbacks of using REP. 1+4=5
- (b) Write some techniques used in requirement elicitation. 4
- (c) State and explain the activities in software requirement analysis. 5
4. (a) What is software requirements specification? Why is it important in software engineering? 1+5=6
- (b) Define DFD. What are the symbols used in DFD? 1+4=5
- (c) What are data dictionaries used for? 3

### UNIT-III

5. (a) What do you understand by software quality? What are software quality attributes? Write any ten software quality attributes. 1+1+5=7  
(b) What is software quality management? Why is it important? 1+2=3  
(c) Discuss any four activities performed by the SQA team. 4
6. (a) What is meant by software quality control (SQC)? Write the benefits of using SQC. 1+4=5  
(b) List and explain the principles of software measurement. 5  
(c) Define software metrics. State the classification of software metrics. 1+3=4

### UNIT-IV

7. (a) Describe the layered elements in the software design model. 4  
(b) With the help of diagrams, explain all the different types of architectural styles. 10
8. (a) Write and explain any five fundamental software design concepts. 5  
(b) Explain the three types of component-level design models with diagrams. 9

### UNIT-V

9. (a) What is software testing? Explain the two categories of software testing. 1+3=4  
(b) What do you understand by black-box testing and white-box testing? Write four advantages and four disadvantages of black-box as well as white-box testing. 2+8=10
10. (a) Explain the reasons why system testing is important. 3  
(b) What is basis path testing? Explain all the steps involved in basis path testing with an example. 1+10=11