

2025

M.Sc. 1st Semester Examination

COMPUTER SCIENCE

Paper : COSC401X1

(Software Engineering)

Full Marks : 35

Time : One Hour Thirty Minutes

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Why Software Engineering is called Layered Technology?
2. What is Prototyping Process Model? Under what circumstances is it recommended?
3. What is software verification and validation?
4. What do you mean by "Phase containment of error"?
5. What are the various metrics for Software Quality?

P.T.O.

(2)

6. What do you mean by the reactive and the proactive risk management strategies?
7. What do you mean by software reengineering?
8. What is mutation testing?

Group - B

Answer any *three* questions : 4×3=12

9. High Cohesion and Low Coupling is required for good design. Explain.
10. State the significance of a Gantt chart for scheduling and monitoring a software project management.
11. Create a control flow graph and find the cyclomatic complexity of the following code :

```
int factorial (unsigned int N) {  
    int fact = 1, i ;  
    for (i = 1; i<= N; i++) {  
        fact * = i;}  
    return fact;}  

```

12. How does the consequences of a risk in a software project assessed?
13. Describe the activities of Software Configuration Management.

(3)

Group - C

Answer any *one* question : 8×1=8

14. With the help of a diagram explain how software can be develop using RAD model? Also mention the advantages and disadvantages of this model. 5+3
15. Explain how software cost can be estimated using COCOMO. Mention all types of COCOMO in estimating software cost. 5+3

Internal Assessment : 5 marks
