(b) What is Cyclomatic Complexity? Let a section of code

```
Main
{
    int I, j, k ,a, b;
    scanf(a,b);
    if (a<b)
    {
        for(i=0;i<5;i++)
        print(a)
    }
    else
    for(j=0;j<5;j++)
    {
        print(b);
    }
exit(1);
}
```

Find the Cyclomatic Complexity of the above given code. 7

UNIT - V

9. (a) Explain about the various types of ISO9000 quality standards? 7

   (b) Write short notes on SCM (Software Configuration Management). 7

10. (a) Write the various steps involved in Statistical Software Quality Assurance (SQA)? 7

   (b) Write short notes on software Reviews. 7

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UG/PG ODD SEMESTER EXAMINATION, 2022

COMPUTER SCIENCE

9th Semester

Course No. : MCSC-901 / MS-301

(Software Engineering)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer any five questions, taking one from each unit)

UNIT-I

1. (a) What is software Myths? Give a focus on various software myths regarding management, customer and developers? 7

   (b) What is process model? Explain Spiral model with a proper diagram? 7

2. (a) Explain Waterfall model? What are the advantages and disadvantages of Waterfall model? 7

   (b) Write a short note on the CMM (Capability Maturity Model)? 7

UNIT-II

3. (a) A company needs to develop a strategy for software

(Turn Over)

product development for which it has a choice of two programming languages L1 and L2. The number lines of code (LOC) developed using L2 is estimated to be twice of the LOC developed with L1. The product will have to be maintained for five years. Various parameters for the company are given in the table below.

Parameter	Language L1	Language L2
Man years needed for development	LOC/10000	LOC/10000
Development Cost per man year	Rs. 10, 00, 000	Rs. 7, 50, 000
Maintenance Time	5 years	5 years
Cost of maintenance per year	Rs. 1,00,000	Rs. 50, 000

Total cost of the project includes cost of development and maintenance. What is the LOC for L1 for which of the cost of the project using L1 is equal to the cost of the project using L2? 7

(b) Value of common parameter of a software system is 10, 5, 10, 7, 2, complexity of software is average and complexity of TCF (Technical complexity factor) is also average. Find out the value of FP (Function Point)? 7

4. (a) A component based software system have 60 component, every component contain 100LOC on an average costing of 1LOC is 10Rs.

(i) What is RE (Risk Exposure) if probability of risk is 20%

(ii) If 30% components are new component and probability of risk is 80%. What is total RE?

(iii) New component 80% risk, old component 5% risk. What is total RE? 7

(b) Size of a software system is 49 KLOC, multiplicative and exponential factors for effort is 1 and 0.5, for duration 2 and 1.5 and software have following cost drivers

i. Complexity is low (1.05)

ii. Reliability is good (1.09)

iii. Portability is very high (1.16)

iv. Development team experience is low (1.25) and other cost drivers are nominal. Find out Effort and Duration? 7

UNIT - III

5. (a) Explain 2-level DFD with example? 7

(b) Define cohesion? Explain the various types of cohesion? 7

6. (a) What is Object-Oriented Life Cycle Model? What are advantages of Object-Oriented Life cycle Model? 7

(b) What is coupling? Explain the various types of coupling? 7

UNIT - IV

7. (a) What is Testing? Explain about various types of Testing in SDLC (software development life cycle). 7

(b) What are the advantages and disadvantages of Cyclomatic Complexity?

8. (a) Write short notes on Equivalence class partitioning (ECP) and Boundary Value Analysis. 7