



**NATIONAL INSTITUTE OF TECHNOLOGY
TIRUCHIRAPPALLI
END SEMESTER EXAMINATION - JULY 2021 SESSION**

DEPARTMENT : COMPUTER APPLICATIONS
DATE & TIME OF EXAM : 03/12/2021 (02:00 PM to 04:00 PM)
SUB CODE : CA725 (SOFTWARE ENGINEERING)
DURATION : 2 Hour
FACULTY NAME : Dr. GHANSHYAM S. BOPCHE

Note to Student:

- **Make sure the ‘Declaration and statement of authorship’ is uploaded along with the answer sheet as cover sheet (First Sheet).**
- **Time Management Is Your Responsibility.**
- **All questions are compulsory (Each question carries 5 Marks).**

- 1) Assume a customer in in an urgent need of software with minimal features (i.e., core software with minimal features). As a software engineer what kind of process model, you will use to develop such software. Explain the chosen process model in detail.
- 2) What are the different techniques to estimate the software size? Explain each technique in brief with their advantages and disadvantages.
- 3) What do you mean by software quality assurance (SQA)? Describe the goals of SQA in detail.
- 4) What are the attributes of good software test? Why the regression testing is an important part of any integration testing procedure?
- 5) A system has 17 external inputs, 16 external outputs, support 20 different external queries, manages 6 internal logical files, and interfaces with 8 different legacy systems. All these data are of average complexity (i.e., 4) and the overall system is relatively simple (*i.e.*, $\sum fi = 12$). If your organization produces 4 function points/month with a burdened labor rate of \$5,000 per person-month, estimate the effort and cost required to build the software.
- 6) For a given program description language (PDL) compute the cyclomatic complexity and number of test cases to be generated.

Program Description Language

```
Declaration
while(condition1 && condition2)
do
    while(condition3)
    do
        if(condition4) then
            True Block
```



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```
end if
end do
end do
if(condition5)
  True Block
else
  False Block
end if
end
```

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