

Evening
Date: 24/11/2015.

Student Exam No. _____

GANPAT UNIVERSITY
B. Tech. SEMESTER -VII (CE/IT)
REGULAR EXAMINATION NOVEMBER – DECEMBER 2015
2CE701/2IT701: SOFTWARE ENGINEERING

Time: 3 Hours

Total Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Be precise and to the point in your answer.
4. Draw the diagrams / figures if necessary.
5. Write each section in a separate answer book.

Section - I

Que. – 1 Answer the following.

- (A) Define the following terms: 6
Software process, Business software, SRS, Error, Failure, software
- (B) What is the role of life cycle model? Explain Classical Waterfall model with its advantages and disadvantages. 6

OR

Que. – 1 Answer the following.

- (A) Discuss Software Development Life Cycle with its various phases. 6
- (B) Write the characteristics of SRS and explain any two in detail. 6

Que. – 2 Answer the following.

- (A) Suppose that a software is developed with the following functional units: 6
Number of user inputs=50, Number of user outputs=40,
Number of user enquiries = 35, Number of internal logical files =06, Number of External Interface files=05. Assume all complexity adjustment factors and weighing factors are high. Calculate Function Points (FP) for this software.
- (B) Define risk and explain Risk management activities. 5

OR

Que. – 2 Answer the following.

- (A) List the size estimation and cost estimation techniques. Explain Lines of code with a suitable example. Also write advantages and disadvantages of LOC. 6
- (B) Suppose that software has 200 KLOC. Calculate the effort, development time, average staff size and productivity for semi-detached mode using Basic COCOMO model. 5

Que. – 3 Answer the following.

- (A) What is formal method? Explain formal technique in detail. 6
- (B) How can we identify the use cases? Can an actor have multiple roles? Explain use case diagram with example. 6

Section – II

Que. – 4 Answer the following.

- (A) What is the role of debugging? Explain System testing in detail. 6
- (B) Briefly explain following. 6
1. Regression testing and performance testing
 2. Beta testing and alpha testing

OR

Que. – 4 Answer the following.

- (A) Define reverse engineering and forward engineering. Explain reverse engineering in detail. 6
- (B) List the types of software maintenance. Explain estimation of software maintenance cost with example. 6

Que. – 5 Answer the following.

- (A) For the following program, draw the Control Flow Graph (CFG) and find out Cyclomatic complexity using McCabe's different methods. 6

```
void main() {
    int a,b,c,delta,r1,r2;
    scanf("%d %d %d",&a,&b,&c);
    delta=(b*b)-(4*a*c);
    if(delta>=0)
    {
        r1=(-b+sqrt(delta))/(2*a);
        r2=(-b-sqrt(delta))/(2*a);
        printf("%d %d",r1,r2); }
    else {
        printf("Enter again"); }
}
```

- (B) Explain problems associated with software maintenance. Write characteristics of software maintenance. 5

OR

Que. – 5 Answer the following.

- (A) Explain different software maintenance process models. 6
- (B) Explain clean room testing and code walkthrough. 5

Que. – 6 Answer the following.

- (A) Explain following characteristics of software: 6
1. Reusability of components
 2. Software does not wear out
- (B) List the different techniques of requirement gathering and explain any two in detail. 6

END OF PAPER