Student Exam No._____

GANPAT UNIVERSITY

B. Tech. SEMESTER -VII COMPUTER ENGINEERING/INFORMATION TECHNOLOGY

REGULAR EXAMINATION NOVEMBER – DECEMBER 2016

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) Explain following characteristics of Software. **6**

1. Software does not wear out
2. Software is flexible

(B) Define software process and explain prototype model with its advantages and disadvantages. **6**

OR

Que. – 1 **Answer the following.**

(A) What is software engineering? Explain W^5H^2 principle in detail. **6**

(B) Define SRS. Explain algebraic specification. **6**

Que. – 2 **Answer the following.**

(A) Define risk and explain software team structure. **6**

(B) Consider a software application with the following functional units: Number of user inputs=75, Number of user outputs=20, Number of user enquiries = 35, Number of internal logical files =08, Number of external interface files=04. Assume all complexity adjustment factors are incidental and all weighting factors are average. Calculate function points (FP) for this project. **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 characteristics of lines of code. **6**

(B) Explain software configuration management. **5**

Que. – 3 **Answer the following.**

(A) Differentiate the following. **6**

1. System software vs. Real time software
2. Forward engineering vs. Reverse engineering

(B) Explain halstead's software science with a suitable example. **6**

SECTION – II

Que. – 4 **Answer the following.**

(A) Why should we test software? List different types of testing. Explain validation and verification. **6**

(B) Explain equivalence class partitioning and boundary value analysis. **6**

OR

Que. – 4 **Answer the following.**

(A) Define following terms: **6**
Formal technique, Bug, Test case, Test suit, Maintenance, Error seeding.

(B) Discuss coding guidelines and coding standards in detail. **6**

Que. – 5 **Answer the following.**

(A) What is McCabe's cyclomatic complexity? Draw the control flow graph (CFG) for following program and find out cyclomatic complexity using McCabe's different methods. **6**

```
void main()
{
    int a=0,b=1,i,c;
    for(i=0;i<=5;i++)
    {
      c=a+b;
      printf("%d",c);
      a=b;
      b=c;
    }
     getch();
}
```

(B) What is technical writing? Explain adaptive maintenance and perfective maintenance. **5**

OR

Que. – 5 **Answer the following.**

(A) Differentiate between essential use case and real use case. Draw 1st level DFD for library book issue process and saving bank account opening process. **6**

(B) What is module cohesion? Briefly explain the types of module cohesion. **5**

Que. – 6 **Answer the following.**

(A) Explain following requirement gathering techniques. **6**
Brainstorming, Presentation, Interview.

(B) Differentiate between basic COCOMO and intermediate COCOMO. Briefly explain organic, semidetached and embedded mode of basic COCOMO **6**

END OF PAPER