B.E. COMPUTER SCIENCE AND ENGINEERING THIRD YEAR SECOND SEMESTER - 2021

SOFTWARE ENGINEERING

Time : Three hours Full Marks : 70

1. (a) Describe the needs of Technical Feasibility study? [5+5]
   (b) What is Project control list? Indicate the activities of Project control list.

2. (a) What is good SRS? Describe the characteristics of a good SRS
   (b) Why the term Requirement Engineering? What are the types of Requirements? . [5+5]

3. Define "Cyclomatic Complexity". Find out the cyclomatic complexity of the of the following program logic (in the form of Structured English): by flowgraph method and graph matrix method. Also find out the basic path set. [10]

```
Read N
Max = 0
I = 1
While I <= N
Read X(I)
If X(I) > Max
 Then Max =X(I)
 I = I+1
Print Max
```

4. (a) Define software complexity? [10]
   (b) Calculate critical program volume of the program segment of question number 3:

5. (a) Why we measure Availability of Software in Software Engineering? [10]
   (b) Draw the state transition table, using Markov Availability model (discrete state and continuous time), of a software system.

6. Failure data for 10 hypothetical electronic components are given in the accompanying table. Calculate the following quantities: [10]

The hazard function, z(t)
The density function, f(t)
The cumulative distribution function, F(t)
The reliability function, R(t)

Failure data for 10 hypothetical electronic components

Failure Number	Operating Time, h
1	8
2	20
3	34
4	46
5	63
6	86
7	111
8	141
9	186
10	266

7. Write short notes on : [5+5]
   (a) Regression Testing
   (b) Conservation of data for process and for Store