Course Code: CST357

Sixth Semester B.E (Computer Science and Engineering) Examination

SOFTWARE ENGINEERING

Time: 2 Hours] [Max. Marks: 40

Instructions to Candidates:

1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answers wherever necessary with the help of neat sketches.
4. Use of non-programmable calculators is permitted.

Question		Description of Question	Marks	CO
1	**(a)**	Provide an insight into various tasks of requirement engineering and discuss requirement elicitation.	05	CO1
	(b)	Which layer behaves as bedrock for software engineering? How this layer relates to other layers?	02	CO1
2	**(a)**	Illustrate the Extreme Programming process with its key ideas and tasks associated with key programming practices.	05	CO2
	(b)	Describe the scenario where evolutionary models would be preferable over incremental model with suitable example.	02	CO2
3		For the following program	08	CO3
		a) Construct the flow graph	02	
		b) Determine the cyclomatic complexity using all three methods	02	
		c) Determine the independent path	01	
		d) Design a set of test cases that will ensure that all statements have been executed.	03	

```
int main() {
    int rows,  space, i, j;
     printf("Enter number of rows: ");
     scanf("%d", &rows);
     for(i=0; i<rows; i++)            {
        for(space=1; space <= rows-i; space++)
            printf("  ");
         for(j=0-i; j <= i; j++) {
             printf("%2d",abs(j));
         }
         printf("\n");
     }
     getch();
}
```

4	**(a)**	Compute the function point value for a project with the following information domain characteristics:- Number of external inputs: 38 Number of external outputs: 60 Number of different external queries: 52 Number of internal logical files: 17 Number of interfaces: 13 All of these data are of highest complexity. Assume that all complexity adjustment values are significant. Assume that 14 algorithms have been counted.	04	CO3
	(b)	Identify and explain the relationship between people and effort with example.	02	CO3
5	**(a)**	"Defect Removal Efficiency is the measure of quality assurance and control activities". Justify.	04	CO3
	(b)	Explain the use of Halstead's metrics to compute – program length, program volume and volume ratio.	02	CO3
6	**(a)**	Elaborate the procedure for version control in SCM process.	03	CO4
	(b)	Explain two basic characteristics of risk and elaborate on categorization of risks.	03	CO4