



- (viii) Explain any three levels of Cohesion. (3)
- (ix) What is Defect Removal Efficiency (DRE) ? How it is used to access the team's ability to find errors, as they are passed to the next framework activity ? (3)
- (x) Briefly explain any three roles of an SQA (Software Quality Assurance) group. (3)
- (xi) What is verification and validation ? Explain with reference to Software testing. (3)
- (xii) What is Boundary Value Analysis (BVA) ? What are the guidelines to create BVA test cases ? (3)

### SECTION B

2. (a) What does the Capability Maturity Model Integration (CMMI) determine ? Explain its five capability levels. (5)
- (b) What are umbrella activities ? List any four umbrella activities. (5)
3. Assume that you have to build a software system that :
- (i) allows students to submit their assignments,
  - (ii) provides an environment to the teachers to evaluate them and
  - (iii) generates the result with minimum input.

Draw a context diagram and level 1 DFD of the above requirements of the system. (10)

4. (a) Create a flow graph to find the cyclomatic complexity of the following code. Also show the no. of independent paths and regions :

```

long int factorial (int n)
{
    long int fact = 1;
    while (n > 1)
    {
        fact = fact * n;
        n --;
    }
    return fact;
}

```

(6)

(b) Explain white box and black box testing methods. (4)

5. (a) Compute the Function Point value for a project with the following information domain characteristics :

Measurement Parameters	Count	Weighing factors		
		Low	Average	High
Number of user inputs	36	3	4	6
Number of user outputs	45	4	5	7
Number of user inquiries	48	3	6	9
Number of files	9	7	10	15
Number of external interfaces	6	5	7	10

Assume the measurement parameters equally divided among low, average and high complexity. Further, assume that the complexity adjustment value is 1.25. (6)

- (b) Determine the cost and efforts required for the above (Q5 (a)) software project. Assume the average productivity for the project is 5 FP/pm and the labor rate of Rs. 40,000 per month. (4)

6. (a) State the significance of a Gantt chart for scheduling and monitoring a software project. (5)
- (b) How does the consequences of a risk in a software project assessed? (5)
7. Write differences between the followings (Attempt any **four**):
- (i) Error vs Defect
  - (ii) Analysis and Design model
  - (iii) Direct and Indirect measures of Software
  - (iv) Alpha and Beta testing
  - (v) Top-down and Bottom-up Integration Testing (10)