

## CHAPTER 5

### PROBLEM SOLVING METHODOLOGY

#### One mark questions:

1. Define problem solving. (K)
2. What is problem definition? (U)
3. What is sequential construct? (U)
4. What is an algorithm? (U)
5. Define flowchart. (K)
6. How are flowcharts classified? (U)
7. Define coding. (K)
8. What do you mean by debugging? (U)
9. What does syntax refer to? (U)
10. What is syntax error? (U)
11. What are semantic errors? (U)
12. What is logical error? (U)
13. What is runtime error? (U)
14. Define stepwise refinement? (K)
15. Define testing. (K)
16. Give one advantage of structured programming. (A)
17. What is the use of documentation? (A)
18. What is program maintenance? (U)
19. Why is program maintenance required? (U)
20. When is selection construct used? (U)
21. What is the use of iteration construct? (A)
22. What is top-down design? (K)

#### Two marks questions

1. Which design tools are used in designing the problems? (K)
2. State the characteristics of algorithm? (U)
3. What is the difference between program and system flowcharts? (U)
4. Explain the difference between source program and object program? (U)
5. Explain the importance of documentation. (U)
6. What are the types of selection construct? (U)
7. What are the characteristics of good program? (U)
8. Write an algorithm to find simple interest. (S)
9. What is Syntax error? Give an example. (U)
10. How is runtime error different from semantic error? (U)
11. Write an algorithm to find average of three numbers. (S)
12. Draw a flowchart to add two numbers. (S)
13. Write the flowchart symbols for (U)
  - a) Decision   b) Looping
14. Mention two differences between while and do-while constructs. (U)
15. Explain the various types of errors detected during testing.

**Three marks questions:**

1. Give advantages of algorithm.
2. Mention advantages of flowchart.
3. What are the different programming constructs? (U)
4. Write an algorithm to swap the values of two variables. (U)
5. Write an algorithm to convert temperature in Fahrenheit to Celsius. (U)
6. Write an algorithm to find largest among three numbers. (U)
7. Write an algorithm to find sum and average of three numbers. (U)
8. What is the importance of flowchart? (U)
9. Draw a flowchart to find the largest of three numbers. (S)
10. Draw a flowchart to calculate simple interest. (S)
11. Draw a flowchart to add all integers from 1 to 100. (S)
12. Draw a flowchart to find factorial of a number. (S)
13. What are the advantages of structured programming? (U)
14. Draw various symbols of flowchart with their purpose. (A)
15. State the different types of errors. (U)
16. Explain if-else-if structure. (K)
17. Explain while loop with example. (U)
18. Explain do-while loop with example. (U)
19. Explain for loop with example. (U)
20. How is iteration construct useful? Explain. (U)
21. Give the syntax, flowchart for the various **if** command. (S)

**Five marks questions**

1. Briefly explain the various stages of problem solving. (U)
2. What are the symbols used in flowchart? (K)
3. Mention advantages and disadvantages of algorithm. (K)
4. Write advantages and disadvantages of flowchart. (K)
5. Briefly explain documentation and maintenance. (U)
6. Explain divide and conquer method. (U)
7. Give the syntax and flowchart of if-else-if and nested-if construct. (U)
8. Explain while construct with flowchart. (U)
9. Explain do-while construct with flowchart. (U)
10. Explain for loop construct with flowchart. (U)
11. Explain while and do-while statements with flowchart and syntax. (A)
12. Explain different forms of **if** statement. (A)
13. Explain top-down analysis with example. (U)
14. Discuss types of errors with example. (U)
15. Explain selection statements. (U)
16. Explain iterative statements. (U)
17. Write algorithm and flowchart to find sum of N natural numbers. (S)
18. Write algorithm and flowchart to find sum of odd and even numbers upto N. (S)