Reg. No :................................

Name :................................

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024
2024 ADMISSIONS REGULAR
B.VOC SWD SEMESTER I - SKILL
VSD1S02B23 - Problem Solving Techniques

Time : 3 Hours   **Maximum Marks : 80**

Part A

I. Answer any Ten questions. Each question carries 2 marks   **(10x2=20)**

1. Define run time error.

2. Define debugging.

3. List out any two methods to find the square root of a number.

4. Explain the logic of Fibonacci series up to n terms

5. Define while loop

6. Define recursion.

7. Explain steps to find prime factors of a number.

8. Write steps to find the GCD of 30 and 18.

9. List out basic operations of an array.

10. Discuss the peculiarity of array address and indexing.

11. Discuss sorting by selection

12. List different types of Searching algorithms.

Part B

II. Answer any Six questions. Each question carries 5 marks   **(6x5=30)**

13. Implement using C programming with Fibonacci concept.

14. Explain Top Down Design and Sub Tasks.

15. Draw a flow chart to exchange of two numbers

16. Given 2 glass marked A and B. Glass A is full of raspberry drink and glass B is full of lemonade .Suggest a way of exchanging the content of Glass A and B. Justify with pictorial representation.

17. Explain Babylonian method to find out the square root of a number with example.

18. Draw a flowchart and design an algorithm to print first n odd numbers.

19. Draw a flow chart for an array order reversal

20. Write an algorithm to print the prime factors of an integer

21. Design algorithm to implement selection sort

Part C

III. Answer any Two questions. Each question carries 15 marks   **(2x15=30)**

22. Explain Palindrome number. Design an algorithm to find out the given number is palindrome or not.

23. Design an Algorithm that finds Greatest Common Divisor . Write down algorithm development step and description.

24. Design an algorithm to partition an array to 2 subset of arrays such that , elements in first array has all values <= X and second array has values>= X . Here X is any integer.

25. Develop algorithm for Insertion Sort with Example