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Shree Damodar College of Commerce & Economics, Margao-Goa
FY BCA, Semester-I, Semester End Examination November 2022
Problem Solving and Programming Concepts (CAC 101)

Duration: 2 hrs**Max Marks: 60****Instructions:**

- 1) Start each question on a fresh page.
- 2) Figures to the right indicate maximum marks.

Q.1.(X) Define the following:**5X1=05**

- a. Bug
- b. Problem Analysis
- c. Array
- d. Algorithm
- e. Documentation

Q.1.(Y) Match the following :**5x1=05**

| | |
|--------------------------|----------------------------|
| 1) Assembler | A) Preprocessor Directive |
| 2) Recursive | B) if-else |
| 3) Conditional Statement | C) Translator |
| 4) Menu Driven | D) Switch Statement |
| 5) #include | E) Function calling itself |

Q.2 Answer the following :

- (a) Differentiate between a Compiler and an Interpreter.
 (2 Points each)

2x1=02

- (b) Compare low level and high level languages (2 points)

3x1=03

- (c) Illustrate the use of two Relational operators in programming using an example.

5x1=05

Q.3 Answer the following :

- | | |
|---|--------|
| (a) Differentiate between debugging and testing. (2 points each) | 2x1=02 |
| (b) List the six steps in the programming life cycle / problem solving. | 3x1=03 |
| (c) Write an Algorithm to find the average of two numbers. | 5x1=05 |

Q.4. Answer the following :

- | | |
|--|--------|
| (a) Indicate how is a While Loop different from a Do While Loop? | 2x1=02 |
| (b) Prepare a flowchart for the following : To find if the entered number is positive and display a message accordingly . | 3x1=03 |
| (c) Illustrate the role played by pointers with an example of the Call by Reference method of functions. | 5x1=05 |

Q.5 Answer the following:

- | | |
|--|--------|
| (a) Explain syntax error with the help of an example | 2x1=02 |
| (b) Describe the basic structure of a C program with the help of an example. | 3x1=03 |
| (c) Explain the use of 2D arrays with the help of an example. | 5x1=05 |

Q.6 Answer the following:

- | | |
|---|--------|
| (a) Define an integer array for storing 8 elements. | 2x1=02 |
| (b) Explain any three C string functions with the help of an example. | 3x1=03 |

(c) Evaluate this Code and answer the questions below:

5x1=05

```
(i) #include <stdio.h>
int main()
{
    int num
    printf("Enter an integer: ");
    scanf("%d", &num);

    if(num % 2 == 0)
        printf("%d is even.", num);
    else
        printf("%d is odd , num);

    return 0;
}
```

- x) Rewrite the above code after correcting the errors.
 - y) For input value of 9, explain the working as per the logic mentioned in the code.
 - z) Display the Output (If the user input is 44).
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