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**Question Paper Code : 65045**

5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2013.

Second Semester

Computer Technology

XCS 125/10677 SW 205— PROGRAMMING IN C

(Common to 5 Year M.Sc. Information Technology and 5 Year M.Sc.  
Software Engineering)

(Regulation 2003/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the benefits of algorithms?
2. Draw a flowchart to find the lowest of two numbers.
3. Define constant. Give example.
4. Write C assignment statements to evaluate the following equation.

$$\text{side} = \sqrt{a^2 + b^2 - 2ab \cos(x)}$$

5. What will be the output of the program?

```
int main()
{
int k= 1;
printf ("%d == 1 is" "%s\n", k, k==1?"TRUE":"FALSE");
return 0;
}
```

6. Distinguish between entry controlled loop and exit control loop.

7. What are the advantages of using pointers?
8. Distinguish structure with union.
9. Mention the advantages of linked list.
10. Define preprocessor.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Mention the various guidelines to be followed while drawing a flowchart. Discuss the advantages and limitations of flowcharting. (8)
- (ii) Draw a flowchart for finding the sum of first ten natural numbers. (8)

Or

- (b) (i) Write an algorithm to check whether the given number is palindrome or not. (10)
- (ii) Write down the rules for writing a C program. (6)
12. (a) (i) Describe the features of primary data types and user-defined data types in C. (10)
- (ii) Define variables and its various types. (6)

Or

- (b) Explain all type of operators in C language with example for each. (16)
13. (a) (i) Write a C program to print the 100 prime numbers. (8)
- (ii) How to access the 2D array elements? Explain it with an example. Also explain the need for array variable. (8)

Or

- (b) (i) Write a C program that will use loops to print out the following triangle of numbers. (8)

```

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

- (ii) Explain switch statement with suitable example. (8)

14. (a) Write a menu driven program to implement string manipulations(length, copy, compare, concatenation and reverse) with library functions. (16)

Or

- (b) Write a C program to read the students name, marks, calculate the sum and average of the marks using structures. (16)
15. (a) (i) Write a C program to copy the file content into another file. (6)
- (ii) Briefly explain about the dynamic memory allocation functions. (10)

Or

- (b) Write a C program to insert a node in the beginning, middle and end of the linked list. (16)
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