

B.TECH. DEGREE EXAMINATION, DECEMBER 2012**Third Semester**

Branch : Computer Science and Engineering/Information Technology

CS 010 303/IT 010 306—PROBLEM SOLVING AND COMPUTER PROGRAMMING
(C.S. and I.T.)

(New Scheme—Regular/Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A*Answer all questions.
Each question carries 3 marks.*

1. Define 'Macros'.
2. What are the different control statements in C ?
3. Explain freed ().
4. What are the basic data types in C ?
5. What is a 'Keyword' ?

(5 × 3 = 15 marks)

Part B*Answer all questions.
Each question carries 5 marks.*

6. Explain the structure of a C program.
7. Define function. What is a void function ?
8. What is a multi-dimensional array ? Explain how the elements of a multi-dimensional array are accessed.
9. Compare 'structure' and 'union'.
10. Illustrate the bitwise operators and their usage.

(5 × 5 = 25 marks)

Part C*Answer either (a) or (b) from each question.
Each full question carries 12 marks.*

11. (a) Write an algorithm and a flowchart to select the largest number from a set of 50 numbers. (12 marks)

Or

- (b) Write a C program to evaluate $1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n}$. (12 marks)

Turn over

12. (a) Write a C program to add two $m \times n$ matrices. (12 marks)

Or

(b) Explain the different control statements in C with suitable examples. (12 marks)

13. (a) Write a C program to display a string in reverse order. (12 marks)

Or

(b) Write the differences between macro and function. Write a C program to find the factorial of a number using function.

(12 marks)

14. (a) Write a C program to read in the marks of 5 subjects of 5 students and display the result with standard rules for result.

(12 marks)

Or

(b) Using pointers, write a C program to read in an array of 50 numbers and print its elements in reverse order.

(12 marks)

15. (a) Write a C program to illustrate appending items to an existing file. (12 marks)

Or

(b) Explain Dynamic memory allocation in detail. Explain the different library routines which serve as memory management functions.

(12 marks)

[5 × 12 = 60 marks]