F 2975 (Pages : 2) Reg. No.....

Name.....

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 $1+\frac{1}{2}+\frac{1}{3}+.....+\frac{1}{n}$. (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 ree 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]