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A – 6350

Reg. No. :

Name :

**Third Semester B.Tech. Degree Examination, October 2016
(2008 Scheme)**

08.302 : PROBLEM SOLVING AND PROGRAMMING IN C (RF)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

1. What is the importance of documentation in program development ? 4
2. Explain the types of programming languages used with a computer for problem solving and application development. 4
3. Write an algorithm in pseudo-code for printing an array in reverse direction. 4
4. What is the role of header files in compilation process ? List four header files used in C. 4
5. Explain the bit-wise operators in C. 4
6. Write a C program to reverse a given integer number. 4
7. Explain the parameter passing methods in C. 4
8. Write a C program to read a text file and display the output on display. 4
9. How would you declare an function receives two int pointers and returns a float pointer ? 4
10. With an example, explain command line arguments in C. 4

(10×4=40 Marks)

PART – B

Answer **any one** full question from **each** module.

Module – 1

11. a) Draw a flowchart to find the biggest of three numbers. 8
- b) With suitable examples, explain different types of programming languages. 6
- c) What is the importance of selecting efficient data structure for problem solving ? 6

OR

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12. a) How do we analyze the performance of a program ? 6
b) Write an algorithm to find the length of a given string. 5
c) Explain with an example, the concept of top-down design. 9

Module – 2

13. a) Write a C program to implement selection sort algorithm. 12
b) Write a C program to read postal address of say n employees and to display the same on the screen. 8

OR

14. a) Given an unsorted array $A[1..n]$ which contains all but one of the integers in the range 0 to n . Write an efficient C program to determine the missing integer. 10
b) Explain the purpose of *extern* storage class with an example. 10

Module – 3

15. a) Write a program in C to read the details of customers in a bank using array of structures. Use a pointer to retrieve those customers who have a loan in the bank. 8
b) Write a function to interchange the values of two variables without using temporary variable. Use parameter passing by reference in your code. 7
c) Explain the differences between structures and union data types in C. 5

OR

16. a) Write a recursive function in C to compute X^n . 10
b) Write a program in C to read a text file and count characters, spaces and tabs in it. 10

(3×20=60 Marks)