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Code No.: 1115 O

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. I Year I-Semester (Old) Examinations, December- 2015

Programming in C and Problem Solving

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE questions from Part-B

Part-A (10 X 2=20 Marks)

1. Convert 1526_{10} into Hexadecimal and binary notations.
2. If originally $X=3$ and $Y=5$, what is the value of X and Y after each of the following expression.
 - a. $X++ + Y$
 - b. $++X$
 - c. $X++ + Y++$
 - d. $X-- - ++X$
3. What is the output of the following code segment.
for ($i=0; i<10; i++$)
 if ($i == 3$)
 break;
 else
 printf("%d",i);
4. Explain static and extern storage classes.
5. How to declare and define one-dimensional and two-dimensional arrays?
6. How many times the following function executes when n value is 6.
fun1(int n)
{
 If ($n == 1 || n == 2$)
 return 1;
 else
 return fun1(n-1)+fun1(n-2);
}
7. Write a C program to demonstrate pointers to pointers.
8. What is the library function to search a substring in a given main string?
9. Define self referential structure. Give an example.
10. What is the equivalent fseek() for rewind() function.

Part-B (Marks: 5x10=50)
(All bits carry equal marks)

11. a) Draw a flowchart to find the biggest of given three numbers.
b) Explain about bitwise operators with suitable examples.

12. a) Write the syntax of the following iterative statements. Using one of these write a C program to print the given pattern.

- i. while loop
 - ii. for loop
- ```
 *
 * *
 * * *
 * * * *
```

b) Write a C program using functions to swap two given numbers without using temporary variable.

13. a) Write a C program to find GCD of two numbers using recursion.

b) Write a C function to find the minimum element in an array of elements. Read the elements of the array from the user and send the array to the function.

14. a) Explain command line arguments. Write a C program to print the command line arguments.

b) Write a C program to determine whether the given string is palindrome or not.

15. a) Write a C program to store the marks of students in 3 subjects using structure. Find out the student who got the highest mark in each subject and display their respective roll numbers. [Read the input values from user. Assume there are 60 students in the class]

b) Write a C program to merge two files and copy into a third file.

16. a) What do you mean by side effect of an expression? List down the operators with side effects. Evaluate the following expression:

$$2+5*(6+1.2-3*(12/6*3.2)-16)*3-(6-4/2)$$

b) Write a function which takes a matrix as argument and display the transpose of the matrix.

17. a) Write a C program to implement bubble sort.

b) Explain the following with examples:

- i. void pointer
- ii. Dynamic Memory Allocation Functions

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