SCHOOL OF STUDIES IN COMPUTER SCIENCE & IT
Pt. Ravishankar Shukla University, Raipur [CG]

Ref. No. 216 /CSc/2015 Raipur, Date : 09 / 05 / 2015

To,

The Dy. Registrar (Academics)
Pt. Ravishankar Shukla University.
Raipur (CG)

Subject : Syllabus of Choice Based Subjects and Computer Science of CBS.

Sir,

A Meeting of Board of Studies was convened on 20/04/2015 for deciding the syllabus of Choice Based Subjects offered by M.Sc.(IT), M.Sc.(CS) and MCA and also to re-decide the syllabus of computer subject for CBS 1st year.

All the four syllabii are enclosed for your kind information and further necessary action.

Thanking you,

Encl : As above

Your Sincerely
09-05-2015
(Dr. Sanjay Kumar)
Chairman
Board of Studies

Copy to –

1. Director, CBS, Pt. RSU, Raipur

09-05-2015
(Dr. Sanjay Kumar)

Revised Syllabus for CBS
Programming in C

Unit I

Introduction to C programming structure and C compiler. Data representation: Simple data types like real integer, character etc. Program, statements and Header Files. Simple Input Output statements in C. Running simple C programs. Data Types, Operators and Expressions.

Unit II

Control Structure: If - statement, If-else statement, Compound Statement, Loops: For - loop, While - loop, Do-While loop, Break and exit statements, Switch statement, Continue statement, Goto statement.

Unit III

Array, Types of Array, String Handling, Functions : Function main, Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion function.

Unit IV

Structure and Union, Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure, Structure and Functions, Union, Scope of Union, Difference between Structure and Union.

Unit V

Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, passing arrays to functions, pointer and functions, accessing array inside functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.

Books

1. Fundamental of Computer : V. Rajaraman
2. Fundamental of Information Technology : Chetan Shrivastava_Kalyani Publishers
3. Let us C : Yashwant Kanitkar.
4. Mastering in C : Venugopal

20.4.15

20-04-2015

List of Practical

Input and Output, formatting

1. Write a program in which you declare variable of all data types supported by C language. Get input from user and print the value of each variable with alignment left, right and column width 10. For real numbers print their values with two digits right to the decimal.

Loops, Decisions

2. Write program to print all combination of 1 2 3.
3. Write program to generate following pattern

a) A B C D E F G

A B C E F G

A B F G

A G

b) 1

1 2

1 2 3

c)

*

* *

* * *

d)

1

1 2 1

1 3 3 1

1 4 6 4 1

4. Write main function using switch…case, if..else and loops which when called asks pattern type; if user enters 11 then first pattern is generated using for loop. If user enters 12 then first pattern is generated using while loop. If user enters 13 then first pattern is generated using do-while loop. If user enters 21 then a second pattern is generated using for loop and so on.
5. Write program to display number 1 to 10 in octal, decimal and hexadecimal system.
6. Write program to display number from one number system to another number system. The program must ask for the number system in which you will input integer value then the program must ask the number system in which you will want output of the input number after that you have to input the number in specified number system and program will give the output according to number system for output you mentioned.
7. Write a program to perform following tasks using switch…case, loops, and conditional operator (as and when necessary).

   a) Find factorial of a number

   b) Print fibonacci series up to n terms and its sum.

   e) Print prime numbers up n terms.

   f) Print whether a given year is leap or not.

Array

8. Create a single program to perform following tasks using switch, if..else, loop and single dimension character array without using library function:

   a) To reverse the string.
   b) To count the number of characters in string.

20-4-2015

c) To copy the one string to other string:
d) To find whether a given string is palindrome or not.
e) To count no. of vowels, consonants in each word of a sentence and no. of punctuation in sentence.
f) To arrange the alphabets of a string in ascending order.

9. Create a single program to perform following tasks using switch, if..else, loop and single dimension integer array:

   a) Sort the elements.

10. Write a program that read the afternoon day temperature for each day of the month and then report the month average temperature as well as the days on which hottest and coolest days occurred.

11. Create a single program to perform following tasks using switch, if..else, loop and double dimension integer array of size 3x3:

    a) Addition of two matrix.

    b) Subtraction of two matrix.

    c) Multiplication of two matrix.

12. Create a single program to perform following tasks using switch, if..else, loop and double dimension character array of size 5x40:

    a) Sorting of string.

    b) Finding the largest string.

    c) Finding the smallest string.

FUNCTIONS

13. Write program using the function power (a, b) to calculate the value of a raised to b.

14. Write a program to perform following tasks using switch…case, loops and function.

    a) Find factorial of a number

    b) Print Fibonacci series up to n terms and its sum.

15. Write a program to perform following tasks using switch…case, loops and **recursive** function.

    a) Find factorial of a number

    b) Print Fibonacci series up to n terms and its sum.

16. Write a function to accept 10 characters and display whether each input character is digit, uppercase letter or lower case letter.

STRUCTURE

17. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare a structure variable of student. Provide facilities to input data in data members and display result of student.

18. Create a structure Date with data member's dd, mm, yy (to store date). Create another structure Employee with data members to hold name of employee, employee id and date of joining (date of joining will be hold by variable of structure Date which appears as data member in Employee Structure). Store data of an employee and print the same.

19. Create a structure Student having data members to store roll number, name of student, name of three subjects, max marks, min marks, obtained marks. Declare array of structure to hold data of 3 students. Provide facilities to display result of all students. Provide facility to display result of specific student whose roll number is given.

POINTER

20. Write a program of swapping two numbers and demonstrates call by value and call by reference.
21. Write a program in c using pointer and function to receive a string and a character as argument and return the no. of occurrences of this character in the string.
22. Write program to find biggest number among three numbers using pointer and function.