School of Computer Application, MCA: 102 - Programming In C

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ASSIGNMENT QUESTIONS: THEORY ASSIGNMENT AND LAB ASSIGNMENT

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THEORY ASSIGNMENT: UNIT 1

- 1. Define Computer and state its applications.
- 2. Draw the block diagram of the computer and explain the different components of the computer.
- 3. What is Hardware.
- 4. What is Software.
- 5. What is a Program.
- 6. Explain the evolution of programming languages giving details of first generation, second generation, third generation & fourth generation language.
- 7. What is the use of an Assembler, Compiler and an Interpreter.
- 8. Distinguish between a Compiler and an Interpreter.
- 9. Define an Algorithm.
- 10. Define Flow Chart. Explain the different symbols (start/end, decision, input/output, processing) used in the flow chart.
- 11. Draw a flow chart to calculate simple interest.
- 12. What do you understand by structured programming.
- 13. Explain the compilation process.
- 14. Define object code.
- 15. What is source code.
- 16. What is an executable code.
- 17. What is the use of a linker.
- 18. What is a loader
- 19. Define an operating system and explain its uses.
- 20. What is an Integrated Development Environment.

THEORY ASSIGNMENT: UNIT 2

- 1. Write a short note on the character set of C language
- 2. What is an identifier and what are the rules enforced on identifiers.
- 3. Enlist all keywords available in C. Write a 5-10 line summary of all the keywords.
- 4. What are the different data types available in C. Give details of size of the data types and their range of values.(char, int, float, long)
- 5. What is the difference between constant and variables. Give example of integer constant, floating point constant, character constant. What is the use of const qualifier.
- 6. What is the syntax for declaring a variable.
- 7. What is a statement.
- 8. What is an expression.
- 9. Explain the different operators (Arithmetic, Relational, Logical, Bitwise, Conditional, Assignment, Increment and Decrement).
- 10. Write a note on precedence of operators.
- 11. What are the different loop constructs. Write the syntax of for loop, while loop and do while loop.
- 12. What is the use of a variable in a program. What is the syntax to declare a variable.
- 13. What is the meaning of case sensitive nature of C language.
- 14. Write a note on size qualifiers (short, long) and sign qualifiers(signed, unsigned).
- 15. Give the syntax for an empty statement.
- 16. What is the size of short int, long int, long double.
- 17. What is the range of values of signed short int, unsigned short int.
- 18. What is a preprocessor directive.
- 19. What is the use of return keyword.
- 20. What is the use of void keyword.
- 21. What is a called function and what is a caller function. If add() is invoked in main(), which function is the called function and which is the caller function. Write the syntax to invoke the user defined function float add(float a, int b, float c, float d, int e)
- 22. What is the difference between while and do-while. Write the syntax of for, while and dowhile construct.
- 23. Write the syntax of if statement, if-else and switch case. Briefly explain with a supporting example.
- 24. What is the use of goto statement.
- 25. What is the difference between a unary operator and a binary operator. Give example of unary operator and binary operator.
- 26. Write the syntax for comments in a C program.
- 27. What is the syntax for type casting of variable.

LAB ASSIGNMENT: UNIT 2

- Write a note on Turbo C IDE. Give details of Menu and Submenus available in Turbo C IDE. Write the keyboard short cut for compiling & executing a program, undo, delete, cut, copy, paste.
- 2. A function f(x) is defined as f(x) = -2x +3 for x<0, f(x)=2x+5 for x>0 [Program objective: use of if, use of arithmetic operators]
- 3. Write a short note on printf function and scanf function. Give details of format specifiers.(%d or %i : signed decimal integer, %o unsigned octal integer, %u unsigned decimal integer, %u unsigned hexadecimal int, %f floating point, %ld decimal long integer, %lu decimal unsigned long integer, %hd decimal short integer, %c char, %s string, %e float in scientific mode.) Write a program declaring variables of the data types mentioned in the question and accept appropriate values through the keyboard and display them. [Program objective: work with variables of various types and use of format specifier]
- 4. Write a note on escape sequence. Write a program using the following escape sequences (\t \n \a \' \" \?) in printf().[Program objective: use of escape sequences]
- 5. Write a program to accept variable values of type int, float, char through a keyboard. [*Program objective: familiarize with working of variables of different types*]
- 6. What is the use of sizeof operator. Write a program to determine size of int, char & float [Program objective: determine the amount of memory allocated for different data types]
- 7. Write a program to calculate Simple Interest. [Program objective: use of Arithmetic operators]
- 8. Declare a variable of int type, char type, float type, double type, short int type, long int type in a program. Accept values through keyboard using scanf function. [Program objective: accepting values of different data types through the keyboard]
- 9. Write a program to display your name and address. (use %s specifier) [Program objective: accept text sting]
- 10. Write a program to accept a set of positive integer numbers through the keyboard and add them. Use break keyword to stop accepting further values when the user accept a negative number to notify the same. [Program objective: use of break keyword]
- 11. Accept a number between 1 to 12 and display the name of the month corresponding to the number. Use switch case keywords. [*Program objective: use of switch case*]
- 12. Write multiplication table of 2, 5 and 10 using for loop (1-10), while loop (1-10) and do while loop (1-10) respectively. [*Program objective: use of loop constructs*]
- 13. Write a program to find if a accepted integer number is even or odd. Use % operator. Use if keyword and else keyword to write the program and display a appropriate message. [Program objective: use of decision constructs]

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- 14. Write a program using for loop to display 1 to 10. In the same program use for loop again to display 2, 4, 6, 8, 10, 12, 14, 16, 18, 20. [Program objective: use of for loop for iteration]
- 15. Write a program to accept 2 integer values and display the result performing the operations of +, -, *, /, %. Write a note on error encountered if % modulo operator is used with float variables/values. [Program objective: use of arithmetic operators]
- 16. Write a program to accept 2 integer values and display the result performing the operations using relational operators <, <=,, >, >=, ==, !=. Display the outcome by performing the checks in if block. [Program objective: use of relational operators]
- 17. Write a program to perform the following operations: a=b++; c=++d; e=--f; g=h--; (a, b, c, d,e,f,g,h are integer variables, with initial values of 5,6,7,8,9,10,11,12 respectively.) Write a note of your observation. [Program objective: understand pre increment and post increment operator, pre decrement and post decrement operator]
- 18. Compute area of a triangle having base b and height h. [Program objective: Use of Arithmetic expression, area= 0.5 * base * height]
- 19. Write a program to find centigrade for a given Farenheit temperature. [*Program objective:* use of expressions. Centi=5.0/9.0 * (F-32)]
- 20. Write a program to reverse a given 5 digit number <32768. [*Program objective: use of %. a=no%10, b=(no/10)%10, c=(no/100)%10, d=(no/1000)%10, e=(no/1000)%10*
- 21. Write a program to accept 2 integer values, compare them for equality and greater than. Display equality or the higher value as the case may be. [Program objective: use of decision construct if else and relational operator == and >]
- 22. Write a program to accept 10 positive integer values and add them. Ignore negative values using if decision construct and continue statement. [Program objective: use of continue. for (i=0;i<10;i++){ if(no<0) continue; else sum=sum + no; }]</p>
- 23. Write a program to display your name. Use clrscr() to clear the screen. [Program objective: use of library function, including header files]
- 24. Calculate area of a triangle given the base and height. Area= B*H/2 [*Program objective:* use of expressions]
- 25. Use getchar and putchar function to accept a character from the keyboard and display it on the monitor. (char c=getchar(); putchar(c); include stdio.h) [*Program objective: use of library functions including header file*]
- 26. Write a program using for loop to compute the sum of squares of 1,2,3,4,5. [Program objective: use of loop]
- 27. Write a program to calculate factorial of 6. [Program objective: use of loop]

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- 28. Write the function float multiply(float a, float b) and call it inside main function [*Program* objective: understand writing user defined function accepting parameters and returning values]
- 29. Write a user defined function to accept your name through the keyboard and display it. Call the user define function inside main().[Program objective: invoke user defined function]
- 30. Write a program to calculate the area of circle, by accepting the value of radius through the keyboard. #define PI 3.14 in the program [*Program objective: use of #define*]
- 31. Write a program to output eligibility for admission test. Conditions imposed: >=70% marks in Science and >=80% marks in Mathematics. Accept the marks of Science and Mathematics through the keyboard. Use logical operator && and if construct. [Program objective: use of logical operators]
- 32. Write a program to accept an integer and display if the number is positive or negative. [Program objective: use of if else and relational expression]
- Write a program to find the sum of digits of a given integer. [Program objective: use of %. While(no>0){ a=no%10; sum+=a; no=no/10;} display sum]
- 34. Write a program that sum up the following series 1/2 + 3/4+ 5/6 + + 99 /100) [Program objective: use of loop construct. float i=1, j=2, sum=0; while(i<99 && j<=100) { sum=sum + i/j; i=i+2; j=j+2;} display sum]
- 35. Write a program and perform the operations 2^3, 2&3, 13>>2, 64<<2 [*Program objective: use of bitwise operator.*]
- 36. Write a program to accept two integer values and display the higher value. Use conditional operator. [*Program objective: Use of conditional operator (expn1) ? (expn2) : expn3]*

For answers to any queries / assistance, please Email: sambitemail@gmail.com