

CIS 1101 PROGRAMMING 1 - MIDTERM REVIEW (ANSWER SHEET)
(VARIABLES, DATA TYPES, OPERATORS, FUNCTIONS, ALTERNATIONS, ITERATIONS)

Name : _____Group : _____Score : _____

Program and Year : _____Date : _____Remarks : _____

PART I

1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

PART II

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PART I. CONCEPTUAL QUESTIONS [70 marks]

A. MULTIPLE CHOICE [45 marks]

DIRECTIONS: Choose the letter of the correct or best answer. Write the CAPITAL LETTER of your answer.
Each item below is worth 3 points.

1. Which of the following data types hold the largest number of bytes?
[A] unsigned char [B] float [C] long int [D] long double
2. The following operators have associativity right to left, EXCEPT:
[A] ? and : [B] /= [C] || [D] =
3. How many of the following are accepted user-defined names in C?
Abcdefghijklmnopqrstuvwxyz ThisIsAValidName! then cis_1101 _your_number 3littlepigs
[A] 2 or fewer [B] 3 [C] 4 [D] 5 or more
4. The ASCII values for small letters a to z are equal to the decimal numbers:
[A] 97 to 122 [B] 1 to 26 [C] 65 to 90 [D] 80 to 105
5. A C programmer can choose names for the following:
I. variables II. functions III. constants IV. locations in a program
[A] I and III [B] I and II [C] I, II, and III [D] I, II, III, IV
6. Which of the following is FALSE about functions?
[A] A named, independent section of C code. [C] Its body is enclosed in braces.
[B] Always returns a value to the calling program. [D] Contains statements executed only when function is called.
7. Which of the following executes the statement/s inside it at least once?
[A] for loop [B] while loop [C] do-while loop [D] Both B and C
8. A function's prototype contains the following all the time, EXCEPT:
[A] The names of the variables [C] Data types of the arguments that will be passed to it
[B] The name of the function [D] The type of the data the function returns
9. Determine the output of the function found on the right:
[A] 9 7 5 3 1
[B] 9 8 7 6 5 4 3 2 1
[C] 9 7 5 3
[D] None of the above

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void loop() {  
    int n;  
    for (n = 9; n!=0; n--)  
        printf("%d ", n--);  
}
```
10. Which of the following is/are not a valid declaration/s in C?
I. short int x; II. signed short x; III. short x; IV. unsigned short x;
[A] 1 [B] 2 [C] 3 and 4 [D] All are valid
11. Analyze the following statements.
I. C was developed at Bell Labs by Dennis Ritchie between 1974 and 1975 to construct utilities running on Unix.
II. C is an imperative procedural language.
[A] Statement I is true and statement II is false. [C] Both statements I and II are true.
[B] Statement I is false and statement II is true. [D] Both statements I and II are false.
12. Let char x = 127. What will be the value stored in x after executing the command "x=x+1; "?
[A] 128 [B] -128 [C] -127 [D] +INF
13. Consider the statement "enum { black, orange, white } color; ". Which statement below is true?
[A] The variable name is either black, orange, or white.
[B] The default value of the nth element/item inside { } is n, which can be manipulated.
[C] The output of the statement printf("%d",orange); is 1.
[D] That can be rewritten as enum color { black, orange, white };
14. How many of the following are keywords in C?
return goto keyword auto default define include integer
[A] 3 or fewer [B] 4 [C] 5 [D] 6 or more
15. What is the fewest possible number of relational operators to be typed in creating a program or function that determines the smallest integer given three different integers a, b, and c as inputs or parameters?
[A] 3 [B] 4 [C] 5 [D] 6 or more

B. PROGRAM SIMULATION [25 marks]

DIRECTIONS: Determine the output of the following programs and write your answers in the spaces being provided. Be careful of the spacings and positioning when writing. If there is any syntax error, write **ERROR**; and if there is no output, leave your answer for that item blank.

Each item below is worth 5 points.

16. #include <stdio.h>
#define NUM 020
void main ()
{
 int x = NUM;
 printf("%d",x);
 printf("%x",x);
}

17. #include <stdio.h>
void main () {
 int x = 5;
 if (x++ <= 5) {
 printf("%d",++x);
 printf("%d",x++);
 }
}

18. #include <stdio.h>
void main ()
{
 int n1 = 1, n2 = 1, i, n3;
 for (i=0,i<=5,++i)
 {
 n3 = n1 + n2;
 n1 = n2;
 n2 = n3;
 }
 printf("%d",n3);
}

19. #include <stdio.h>
void main () {
 const int x = 15;
 if (x % 3 == 0)
 printf("I ");
 else if (x % 5 == 0)
 printf("love ");
 else
 printf("you ");
 printf("!!!");
}

20. #include <stdio.h>
void main(){
 const int x = 2;
 switch (x){
 case 1: printf("1");
 case 2: printf("2");
 case 3: printf("3");
 case 4: printf("4");
 default: printf("0");
 }
}

PART II. PROGRAMMING [60 marks]

DIRECTIONS: Create a program (with the specified functions to be named appropriately) with the following specifications. The number of marks you will receive in this portion depends on the accuracy and efficiency of your code written. Answer only what is being asked and do not go beyond the given specifications.

In the main function, ask for a character input from the user as well as three integer inputs.

- (a) If the character input is equal to 'a', then call the following functions and have each return value displayed in a separate line.

(i) The first function will accept as parameter the first integer being entered and return the sum of the factors of the integer being passed.

(ii) The second function will accept as parameter the second integer being entered and return the smallest perfect square number greater than or equal to the integer being passed.

(iii) The third function will accept as parameter the third integer being entered and return the binary equivalent (base 2) of the integer being passed.
- (b) If the character input is equal to 'b', then

(i) Call a function that accepts as parameter the three integers in the order they are inputted.

These three integers shall represent the side lengths of a triangle. The function will determine if the three sides can form a triangle or not. If they won't do so, have the function display "Triangle is invalid"; otherwise, have the function classify whether the triangle is equilateral, isosceles, or scalene, with the display "Triangle is _____".
- (c) If the character input is any other then 'a' or 'b', then call a function that accepts as parameter the three integers being inputted and display the floating-point average of the three numbers.

Scoring:	Program header and main():	10 points
	Function definitions in (a):	25 points
	Function definitions in (b):	20 points
	Function definitions in (c):	5 points

Total: 60 points

“There are no limits to what you can accomplish, except the limits you place on your own thinking.”

- Bryan Tracy -

=== *THE END* ===

God bless you!

REVIEW YOUR ANSWERS!



W. Dayata