Name:	Student ID:	Date:

Worksheet 3

Data Types, Conversion Characters

Objectives

}

After completing this worksheet, you should be able to

- Know various elements that build C language
- Use an output function (command) in C
- Declare variables with suitable data types
- Understand the conversion specifications in an output function
- 1. Run the Code::Blocks program, and then create a new project and write Program 3.1.

Program 3.1

2. Compile and run the program (choose **Execute** \rightarrow **Compile & Run** or press **F9** key), then record the result produced by the program in Table 3.1.

Line number	Column						Results produced by program 3.1														50											
1																																
2																																
3																																
4																																
5																																
6																											\Box			I	\Box	
7																																
8																																

Table 3.1

3.	Modify the escape sequ		nents 5,7,8 and 9	
	printf("\xa\xa");			
	·			
	printf("print spe	ecial character \x27 \	x22 \x5c");	8
	printf(" $\x7\x7$	7");		
	Run the modified progr Program 3.1. Why?	am. Is the result pro	duced by the program dif	ferent from one provided by
4.	<pre>#include <stdio.h> #include <stdib.h> int main(int argc, char * int a = 123; float b = 456.78; char c = 'Z'; printf("a = %d \n", float of the control of the c</stdib.h></stdio.h></pre>	argv[]) { //Declare an integ //Declare a floatin // Declare a chara (,a);	cter variable, named c , ar	initialize it with 123 b, and initialize it with 456.78 and initialize it with Z
	printf("c = %c \n",	C);		
	return 0;			
	}	r	Program 3.2	
	(11) a -			
5.	Change the function (2	in Program 3.2 to		
	printf("b = %e	e \n",b);		(2)
	Run the program and re	ecord the result	b =	
	What does this function	n display?		

- 6. Declare three variables that can store the vales as follows:
 - The first variable named "X" stores the value ranging from -32768 to 32767.
 - The second variable named "Y" stores the value ranging from -1.7×10^{-308} to $1.7 \times 10^{+308}$.
 - The third variable named "Z" stores one character ranging from a z or A-Z or +, -, *, / signs.

7. Open a new editor, write Program 3.3 and run it. #include <stdio.h> #include <stdlib.h> int main(int argc, char *argv[]) { int x, y; float z; x = 15; y = 7; z = 3.141596295; printf("123456789012345678901234567890\n"); printf("%d \n ",x); printf("%5d\n",x); printf("%20d\n",x); printf("%010d\n",x); //This function is equivalent to printf("%.10d\n",x); -----(5)printf("%*d\n",y,x); //Add extra spaces corresponding to a value defined in y -----------(7)printf("%f\n",z); -----printf("%10.3f\n",z); ------(8) printf("%10.3e\n",z); printf("%020f\n",z); ------(10) $\langle 11 \rangle$ printf("%*.*f\n",x,y,z) system("PAUSE"); return 0;

}

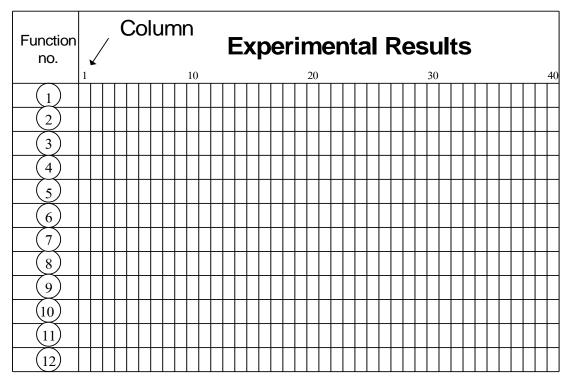


Table 3.2

Home	work 3	
1.	Which of the following are valid variable names in the C program? If invalid, explain why?	
	1.1 root	
	1.2 main	
	1.3 Salary	
	1.4 9thFloor	
	1.5 input value	
	1.6 MyAddress	
	1.7 int	
	1.8 AUto	
	1.9 You&me	
	1.10 income_tax	

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2. Given a set of **integer** variables as follows:

$$a = 1,$$
 $b = 100,$ $c = 10000,$ $x = 9,$ $y = 999,$ and $z = 9999$

From the knowledge of the **field width** in C language, write a program that displays the values stored in above variables in table-like format as shown below.

	Number		Amount	
	1		9	
	100		999	ĺ
	10000		9999	1