Midterm Exam

Due Oct 13 at 12:25pm **Points** 100 **Questions** 33
Available Oct 13 at 11am - Oct 13 at 12:27pm about 1 hour **Time Limit** 85 Minutes

Instructions

Please answer the following questions.

This exam is open book and open paper (not electronic) notes.

By taking this exam, I pledge that during the course of the exam I will not communicate with anyone other than the course staff. I will not visit any website other than the site of the exam itself, nor will I use any external tools except for the last 3 coding problems (e.g., IDEs or compilers) during the exam period. My browser will be set to full-screen for the entire period of the exam with the only browser tab open to the exam, unless I am actively communicating with course staff.

I certify that the answers submitted are solely my work.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	79 minutes	40 out of 100 *

* Some questions not yet graded

Score for this quiz: **40** out of 100 *
Submitted Oct 13 at 12:19pm
This attempt took 79 minutes.

Question 1 — 1 / 1 pts

The CPU is

- responsible for executing instructions and processing data
- the brain of a computer
- neither of these

Correct!

both of these

Question 2

1 / 1 pts

An operating system

- is not required to run a computer
- none of these
- is a collection of utilities that control a computer

Correct!

- loads from the CPU when booting a computer

Question 3

0 / 1 pts

An int has:

You Answered

- 8 bits
- 16 bits
- 64 bits

Correct Answer

- 32 bits

Question 4

1 / 1 pts

Which of the following is true?

‘e’ < ‘F’ is true in ASCII

Correct! A blank space < '0' in ASCII

'e' < '0' in ASCII

‘F’ < ‘1’ is true in ASCII

Question 5

1 / 1 pts

A gigabyte (the x^y means x to the y power)

is 2^10 bytes

Correct! is 2^30 bytes

is 2^40 bytes

is 2^20 bytes

Question 6

0 / 1 pts

The code that declares a named constant **MAX** is:

const double MAX = 100;

You Answered #define Max 100

Correct Answer Both of these

None of these

Question 7

0 / 1 pts

In C, which of the following is an equivalence operator:

- !=
- ==

You Answered

- Neither == or !=

Correct Answer

- Both == and !=

Question 8

0 / 1 pts

Which choice has operators in order of precedence from lowest to highest?

- ! % - <= != += ||

You Answered

- ! % - <= != || +=
- None of these

Correct Answer

- += || != <= - % !

Question 9

1 / 1 pts

The expression

```
n *= a / b + c;
```

is equivalent to _____.

n = n * a / b + c;

Correct!

none of these

n = n * a / (b + c);

n = (n * a / b + c);

Question 10

1 / 1 pts

Which library contains the scanf function?

Correct!

stdio.h

input.h

studio.h

stdlib.h

Question 11

1 / 1 pts

Local variables

are defined above main

Correct!

are defined inside a function body

are defined immediately before a function definition

cannot be defined

Question 12

1 / 1 pts

In `z = func(1, 2, 3);` , 1 is a:

- none of these
- output argument
- parameter
- actual argument

Correct!

Question 13

1 / 1 pts

Which of the following expressions represents:

n is either equal to 12 or not greater than 6

- n == 12 || !n > 6
- n = 12 || !(n > 6)
- n = 12 || !n > 6
- n == 12 || n <= 6

Correct!

Question 14

1 / 1 pts

Which of the following is a control structure?

- sequential structure
- all of these

Correct!

iteration structure

selection structure

Question 15

0 / 1 pts

Which structure executes an action if one of a number of conditions is true and performs a different action if all of the conditions is false.

if

switch

Correct Answer

if...else if...else

You Answered

if...else

Question 16

1 / 1 pts

Which of these is a multiple-selection structure.

none of these

Correct!

if...else if...else

if...else

if

Question 17

0 / 1 pts

This loop is

```
for(int i=0; i<10; i+1);
```

- okay
- a syntax error
- You Answered — none of these
- Correct Answer — an infinite loop

Question 18

1 / 1 pts

How many times will this loop execute: **for(i=1; i<n; i++);**

- 0
- n
- n+1
- Correct! — n-1

Question 19

1 / 1 pts

A _____ loop stops executing when a special input value is entered.

- flag-controlled
- Correct! — sentinel-controlled
- standard

- end-file

Question 20

1 / 1 pts

The body of a for loop

- can only have one line of code in

Correct!

- might not be executed at all
- is always executed at least once
- does not require any semicolons at all

Question 21

2 / 2 pts

What value is assigned to q in the statement

```
q = func(1, 2, 3, 4);
```

if func is defined as follows?

```
}
int func(int a, int b, int c, int d) {
   int p = a * b + 2 / (c - d);
   return p;
}
```

Correct!

0

Correct Answers

0

Question 22

2 / 2 pts

What is printed by the following code?

```
int main(){
   int a=4, b=3, c=2, d=1;
   func(a, b, c, d);
}

void func(int a, int b, int c, int d){
}
   a--;
   b %= 2;
   c *= 10;
   d += 5;
   printf("%d %d %d %d", a, b, c, d);
   return;
}
```

Correct!

3 1 20 6

Correct Answers

3 1 20 6

Question 23

4 / 4 pts

What is printed by the following code?

```
int main(){
   int a=4, b=3, c=2, d=1;
   func(a, b, c, d);
}

} void func(int a, int b, int c, int d){
   if(a > b && c > d)
      printf("True");
   else
      printf("False");
   return;
}
```

Correct!

- (●) True
- ( ) False

Question 24

4 / 4 pts

What is printed by the following code?

```
int main(){
   int a=4, b=3, c=2, d=1;
   func(a, b, c, d);
}

} void func(int a, int b, int c, int d){
   if(a < b || c > d && a <= d)
      printf("True");
   else
      printf("False");
   return;
}
```

- True
- False

Correct!

Question 25

0 / 4 pts

What is printed by the following code?

```
int main(){
   int a=1, b=2, c=3, d=4;
   func(a, b, c, d);
}

void func(int a, int b, int c, int d){
   if(a > b || c < d && a >= d)
}      printf("One");
   else if(a < b && c < d || a >= d)
      printf("Two");
   else if(a > b && c < d && a >= d)
      printf("Three");
   else
      printf("Zero");
   return;
}
```

- Zero
- Two

Correct Answer

- One

You Answered

- Three

Question 26

0 / 4 pts

What is printed by the following code?

```
int main(){
   int a=1, b=2, c=3, d=4;
   func(a, b, c, d);
}

void func(int a, int b, int c, int d){
   switch(c){
      case 1:
         printf("Red ");
      case 2:
         printf("Green ")
         break;
      case 3:
         printf("Blue ");
      case 4:
         printf("Cyan ");
         break;
      default:
         printf("None");
   }
   return;
}
```

You Answered

Blue None

Correct Answers

Blue Cyan

Question 27

4 / 4 pts

What value is returned from the following function to x if the function call is:

```
int main(){
   int a=1, b=2, c=3, d=4;
   int x = func(a, b, c, d);
}
} int func(int a, int b, int c, int d){
   int n = 25;
   for(int i=c; i<10; i+=2){
      n += i;
   }
   return n;
}
```

Correct!

49

Correct Answers

49

Question 28

4 / 4 pts

How many lines does this loop print?

```
for (int i = 10; i < 60; i += 2)
    printf("%d\n", i);
```

Correct!

25

Correct Answers

25

Question 29

6 / 6 pts

How many **lines of output** will be displayed by the following program fragment? (NOTE: The inner loop initialization depends on the outer loop.)

```
for (int i = 2; i < 5; i+=1)
  for (int j = 0; j < i; j+=2)
     printf("%d %d\n", i, j);
```

Correct!

5

Correct Answers 5

Question 30

0 / 6 pts

What is printed by the following?

```
for(int i=3; i<4; i+=1)
  for(int j=2; j<4; j+=1) {
    if(i == j)
      printf("|%d == %d|", i, j);
    else
      printf("|%d != %d|", i, j);
  }
}
```

You Answered |3 != 2| |3 == 3|

Correct Answers |3 != 2||3 == 3|

Question 31

Not yet graded / 10 pts

****** The next three problems are coding problems. I suggest that you copy and paste the problems into your IDE and comment them. This will keep you from switching between your IDE and browser. It should save you time.**

Write an empty main function.

Write a function called min() that accepts 3 doubles and returns the minimum value of the three.

Add code to your main function to test your code. Use all permutations of 1, 2, and 3 (1,2,3) (1,3,2) (2,1,3) (2,3,1) (3,1,2) (3,2,1). The output below proves that min() finds the min of the three for all of the required test data.

Output
min = 1.00
min = 1.00
min = 1.00

min = 1.00
min = 1.00
min = 1.00

Copy your code and paste it below.

Your Answer:

```
#include <stdio.h>

void min(int num1, int num2, int num3);

int main() {

int num1, num2, num3;

printf("Input 3 numbers: ");
scanf("%d %d %d", &num1, &num2, &num3);

min(num1, num2, num3);

return 0;
}

void min(int num1, int num2, int num3) {
if (num1 < num2 && num1 < num3) {
printf("min = %d", num1);
}
else if(num2 < num3) {
printf("min = %d", num2);
}
else {
printf("min = %d", num3);
}

}
```

Question 32

Not yet graded / 10 pts

Write an empty main function.

Write a function called print_odd_7_no_5() that accepts integers m and n, and prints all ints from m to n that are odd, divisible by 7 and not divisible by 5.

Hint: Use a for loop to iterate from m to n inclusive (test it) and add code to only print odd, divisible by 7 and not divisible by 5 (test again).

Add code to your main function to test your code from 1 to 200.

Output
7 21 49 63 77 91 119 133 147 161 189

Copy tour code and paste it below.

Your Answer:

```
#include <stdio.h>

int print_odd_7_no_5(int m, int n);

int main() {

int m, n;

printf("Input M: ");
scanf("%d", &m);

printf("Input N: ");
scanf("%d", &n);

print_odd_7_no_5(m,n);

return 0;
}

int print_odd_7_no_5(int m, int n) {
for (int m=1; m < n; m++) {
if((m%2==0) || (m%7==0) || (m%5==0)) {
printf("%d %d\n", m, n);
}
}
}
```

Question 33

Not yet graded / 20 pts

Write an empty main function.

Write a function called rdiag() that accepts an integer n and prints an n by n square of 0s and 1s as shown below. Notice that only the reverse diagonal has 1s.

Hint: Write a nested loop to print n rows and n columns of zeros (test it) add code to print the selected pattern (test again).

Add code to your main function to test your code.

Output
0000000001
0000000010
0000000100
0000001000
0000010000
0000100000
0001000000
0010000000
0100000000
1000000000

Copy and paste your code below.

Your Answer:

```
#include <stdio.h>

int rdiag(int n);

int main() {
int n;

printf("What is n?: ");
scanf("%d", &n);

rdiag(n);

return 0;
}

int rdiag(int n) {
for (int i=1; i <= n; i++) {
printf("%d\n", n);
}
}
```

Quiz Score: **40** out of 100