KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

Information and Computer Science Department

Fall Semester (Term 131)

ICS103 Computer Programming in C (2-3-3)

**Midterm Exam**

NOVEMBER 4, 2013

120 Minutes

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| Exam Code | 001 | | | | | | | | | | | |
| Student Name |  | | | | | | | | | | | |
| KFUPM ID |  |  |  | |  |  | |  |  | |  |  |
| Class Section | ABDULLA AL-SUKAIRY | | | □ 07 (UT 11am) | | |  | | |  | | |
| ASHARF AL\_FAGIH | | | □ 11 (MW 07am) | | | □ 16 (MW 08am) | | | □ 19 (MW 09am) | | |
| AKRAM AHMAD | | | □ 15 (MW 08am) | | | □ 18 (MW 09am) | | | □ 21 (MW 11am) | | |
| AHMAD IRFAN | | | □ 13 (MW 07am) | | |  | | |  | | |
| AHMED AL-MULHEM | | | □ 24 (MW 1:10pm) | | |  | | |  | | |
| EMAD RAMADAN | | | □ 1 (UT 07am) | | | □ 5 (UT 08am) | | |  | | |
| ESAM MLAIH | | | □ 2 (UT 07am) | | | □ 6 (UT 08am) | | | □ 10 (UT 1:10pm) | | |
| MASUD HASAN | | | □ 17 (MW 09am) | | | □ 22 (MW 11am) | | | □ 25 (MW 1:10pm) | | |
| MOHAMED BALAH | | | □ 3 (UT 07am) | | | □ 12 (MW 07am) | | |  | | |
| RAFI UL HASAN | | | □ 8 (UT 11am) | | | □ 9 (UT 1:10pm) | | |  | | |
| ZAHID AYAR | | | □ 20 (MW 11am) | | | □ 23 (MW 1:10pm) | | |  | | |

**Note: All questions have the same weight (40 questions, 2.5 points each).**

**IMPORTANT NOTES**

* Fill-in your information on the answer sheet.
* **Mark your answers on the answer sheet.**
* **The answer sheet is the only one that will be graded.**
* Do NOT start the exam until you are instructed to do so.
* This is a closed material exam. So, remove any relevant material.
* Calculators are NOT allowed. If you have one, put it on the floor.
* Mobile phones are NOT allowed. If you have one, switch it off NOW.

1. Which of the following is not a valid C comment?
2. //\* This is a comment.
3. \\* This is a comment. \*\
4. //This is a comment.
5. /\*\* This is a comment \*/
6. The operation between double and int would give the result as:
7. double
8. int
9. unsigned int
10. None of the Above
11. Which of the following are valid identifiers?

**i**. \_main **ii.** 9c **iii**. Int **iv**. Name\_And\_Address **v**. grade-s

1. i, ii, iv, v
2. i, iv
3. i, iii, iv
4. ii, iv, v
5. Which of the following operator is used to check equality between two values?

1. :=
2. equal
3. ==
4. =
5. How many times is a do-while loop guaranteed to loop?
6. 0
7. 1
8. Variable
9. cannot be predicted
10. Which header file do you need to use typecasting?
11. stdin.h
12. stdlib.h
13. math.h
14. None of the above
15. Which of the following are reserved words in C language?

**i**. scanf **ii**. PI **iii**. return **iv.** void

1. i, ii, and iii
2. i, iii, and iv
3. iii, and iv
4. ii, iii and iv
5. Which preprocessor directive will you add to the following C program to make it work correctly?

#include<stdio.h>

int main()

{

printf("%f\n", log(36.0));

return 0;

}

1. #include <conio.h>
2. #include <stdlib.h>
3. #include <math.h>
4. #include <math.lib>
5. The expression “x is not greater than 100 and not even”, can be written in C as:
6. x !> 100 && !%2 == 0
7. x < 100 && x%2 == 0
8. x !> 100 && %2 !=0
9. x <= 100 && x%2 != 0
10. Which of the answers is equivalent to the following logical expression?

!A || !B || C

1. !(A && B) || C
2. A || B && !C
3. !(A && B && C)
4. None of the above.
5. The following expression evaluates to:

(double)(10/4)

1. 2.5
2. 2
3. 2.0
4. 0.0
5. What will be the output of the following code fragment?

int m=98,i,j,k;

i=m/100;

j=m%100;

k=m/10;

printf("%d%d%d\n",i,j,k);

1. 0989
2. 19810
3. 009
4. 1010
5. The following expression evaluates to:

8<=12-4

1. 8
2. -3
3. 0
4. 1
5. What will be the result of evaluating the following expression

!(1 && !(0 || 1))

1. 1
2. 0
3. can not be evaluated
4. None of the above
5. Given the following declarations:

double i= -19.963;

int j = 19;

Which print statement produces the following output? (A square represents one space)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| - | 1 | 9 | . | 9 | 6 |  |  | 1 | 9 |

1. printf("%8.2f%4d", i, j);
2. printf("%8.4f%2d", i, j);
3. printf("%3.2f%4d", i, j);
4. printf("%6.2f%2d", i, j);
5. What will be the values of the variables *a* and *p* after executing the following statements?

int j=3, k=2, p;

double q=7.2, r=2.0, a;

a = j/k;

p = q/r;

1. a=1.5, p=4
2. a=2.0, p=4
3. a=1.5, p=3
4. a=1.0, p=3
5. How many times will “ICS 103” be printed after executing the following statements?

int m=1, j;

do {

j=m;

while(j<=4){

printf("ICS 103\n");

j++;

}

m++;

} while (m <= 4);

1. 9 times
2. 10 times
3. 12 times
4. 16 times
5. What will be the result of the following expression in C?

3\*4/5+10/5+8-1+7/8

1. 9
2. 10
3. 11
4. 12
5. Which of the following is the correct order of evaluation for the C operators in the expression shown below?

2 \* y + z / -x

1. \*, /, +, -
2. -, \*, /, +
3. \*, +, /, -
4. -, \*, +, /
5. Which of the following is the correct order of evaluation for the C operators in the expression shown below?

!x || y + z == 5 > 2

1. !, +, ==, >, ||
2. +, >, ==, !, ||
3. !, +, >, ==, ||
4. !, ||, +, ==, >
5. What is the output of the following C code fragment?

int a=2,b,c=3;

b=a++ + ++c;

printf("a=%d, b=%d, c=%d",a,b,c++);

1. a=2, b=5, c=4
2. a=3, b=6, c=4
3. a=3, b=6, c=5
4. a=2, b=7, c=4
5. What is the output of the following code fragment?

int i=4, z=12;

if(i=5 || z>50)

printf("Hello");

else

printf("Welcome");

1. Hello
2. Welcome
3. Compilation error because of i=5 inside if
4. HelloWelcome
5. What will be the shown on the screen as a result of executing the following code fragment?

int score = 80;

if(score > 90)

printf("A");

printf("B");

if(score <= 90)

printf("C");

else

printf("D");

printf("E");

1. C
2. BCE
3. BC
4. Compilation error: 2 statements between if and if without curly brackets

**The following code fragment is for questions ‎24 and ‎25;**

|  |
| --- |
| if(x < 10)  if(y > 10)  printf(“\*\*\*\n”);  else  printf(“###\n”);  printf(“$$$\n”); |

1. What is the output if the value of x is **9** and y is **11** ?
2. \*\*\*
3. \*\*\*

###

1. \*\*\*

$$$

1. ###

$$$

1. What is the output if the value of x is 11 and y is 9 ?
2. No output
3. ###

$$$

1. $$$
2. \*\*\*

$$$

1. What is the output when the following code is run?

int x;

for(x=0; x<5; x++)

x++;

printf("x=%d ",x);

1. x=1 x=2 x=3 x=4 x=5
2. x=6
3. x=0 x=1 x=2 x=3 x=4
4. x=10

**The following code fragment is for questions ‎27 and ‎28;**

|  |
| --- |
| #include <stdio.h>  int main() {  int x;  printf("Enter a value for x >");  scanf("%d",&x);  if(x >= 5 ) {  if(x < 10){  if(x > 8)  printf("A");  else  printf("C");  }  else{  if ( x >= 0)  printf("D");  else  printf("E");  }  }  else  printf("F");  return 0;  } |

1. What is the output if the value typed by the user is **7** ?
2. C
3. F
4. A
5. D
6. What is the output if the value typed by the user is **12** ?
7. C
8. F
9. A
10. D
11. How many times will the following code print the word “hello”?

for(i=1; i<=1000; i++);

printf(“hello”);

1. 1 time
2. 1000 times
3. Zero times
4. Syntax error because of semi-colon ; after closing bracket of for statement

**The following code fragment is for questions ‎30 and ‎31:**

|  |
| --- |
| #include <stdio.h>  int main()  {  int x;  printf("Enter a value for x: ");  scanf("%d", &x);  switch(x) {  case 1: x=x+1;  break;  case 3: x=x+2;  case 5: if(x==4)  x=x+6;  case 6: x=x+3;  break;  default : x=x-1;  }    printf("%d\n",x);  return 0;  } |

1. What is the output if the value typed by the user is **3** ?
2. 7
3. 5
4. 3
5. 8
6. What is the output if the value typed by the user is **2** ?
7. 4
8. 2
9. 1
10. 3
11. What is the output of the following code fragment?

char x = 'B';

switch (x) {

case 'A': printf("A");

case 'B': printf("B");

case 'C': printf("C");

}

1. B
2. BC
3. Compilation error because switch without default case.
4. Compilation error because no break statements after each case.
5. What will be the output of the following code fragment?

int i, count;  
count=0;  
for ( i=0;i<=10; i++)  
 {if(i%2==0)

count++; }  
printf("%d", count);

1. 6
2. 5
3. 4
4. 3
5. What will be shown on the screen as a result of executing the following statements?

int m=6, n, j=0;

for(n=3;m==6;n++) {

m--;

while(j!=1)

j++;

}

printf("m=%d, n=%d, j=%d\n",m,n,j);

1. m=5, n=4, j=1
2. m=6, n=3, j=0
3. m=5, n=3, j=1
4. m=4, n=4, j=0
5. What will be shown on the screen as a result of executing the following statements?

int sum=0,i=12;

while(sum<25) {

sum+=i;

i-=3;

}

printf("i=%d, sum=%d\n",i,sum);

1. i=6, sum=25
2. i=3, sum=27
3. i=6, sum=21
4. i=3, sum=21
5. What is the output of the following code fragments:

|  |  |  |
| --- | --- | --- |
| int j, k=0;  do {  for(j=0; j < 3-k; j++)  printf("\*");  printf("%d\n",j);  k++;  } while (k <= 3); | | |
| **A.** | | **B.** |
| \*\*\*3  \*\*2  \*1 | | \*\*\*3  \*\*2  \*1  0 |
| **C.** | | **D.** |
| \*\*2  \*1  0  \*1  \*\*2 | | \*0  \*1  \*2  \*3 |

1. What will be the shown on the screen as a result of executing the following code fragment?

int i;

for (i=1;i<=15;i++){

if(i<6 && i<8)

continue;

printf("%d ",i);

if(i>9)

break;

}

1. 6 7 8 9
2. 6 7 8 9 10
3. 8 9
4. 8 9 10

**The following code fragment is for questions ‎38, ‎39, and ‎40:**

|  |
| --- |
| int x, sum =0, count =0;  double avg;  FILE \*infile;  **Blank1**  while(**Blank2**){  sum = sum + x;  **Blank3**  }  avg = (double)sum/count;  printf("Count = %d \n",count);  printf("Sum = %d \n",sum);  printf("Average = %f \n",avg);  fclose(infile); |

The program above is supposed to read integer numbers from text file "***mydata.txt***" and print the count, sum, and average of them on the screen. The number of integer numbers in the text file is not known beforehand.

1. The proper statement replacing Blank1 is:
2. fopen("mydata.txt", "w");
3. infile = openfile("mydata.txt","r");
4. fopen("mydata.txt", "r");
5. infile = fopen("mydata.txt", "r");
6. The proper statement replacing Blank2 is:
7. scanf(infile, "%d", &x) != EOF
8. fscanf(infile,"%d", &x) != EOF
9. scanf(infile, "%d", &x) != NULL
10. fscanf(infile,"%d", &x) != NULL
11. The proper statement replacing Blank3 is:
12. sum++;
13. x++;
14. count++;
15. fscanf(infile,"%d", &x);