2017 程序设计基础期末考试

I. Choose the right unique answer(3 points * 15,total 45 points)

1. What will be the output of the program?

```
#include <stdio.h>
int main(){
    int i = 2;
    int j = i + (1, 2, 3, 4, 5);
    printf("%d\n", j);
    return 0;
}
```

A. 4

B. 7

C. 6

D. 5

2. What will be the output of the program?

```
#include <stdio.h>
int main(){
    char str1[] = "Hello";
    char str2[] = "Hello";
    if (str1 == str2)
        printf("Equal\n");
    else
        printf("Unequal\n");
    return 0;
}
```

A. Equal

B. Unequal

C. Error

D. None of above

3. What does the declaration char *arr[10]; signify?

A. arr is an array of 10 character pointers.

B. arr is an array of function pointers.

C. arr is an array of characters.

D. arr is an pointer to array of characters.

4. Which of the following is the correct usage of conditional operators used in C?

A. a > b ? c = 30 : c = 40

B. a > b ? c = 30;

C. max = a > b ? a > c ? a : c : b > c ? b : c

D. return (a > b) ? (a : b)

5. Input/output function prototypes and macros are defined in which header file?

A. conio.h

B. stdlib.h

C. stdio.h

D. dos.h

6. In C, what is the correct precedence order of operators?

A. * != <= +=

B. != += * <=

C. * <= != +=

D. != += <= *

7. What is the output of the following program?

```
#include <stdio.h>
int main(){
    int a[3] = {2,1};
    printf("%d", a[a[1]]);
}
```

A. 0

B. 1

C. 2

D. 3

8. How do you specify double constant 3.14 as a long double?

A. By using LD after 3.14

B. By using L after 3.14

C. By using DL after 3.14

D. By using LF after 3.14

9. A variable name in C includes which special symbols?

A. * (asterisk)

B. # (hash)

C. + (addition)

D. _ (underscore)

10. What is the output of the below code snippet?

```
#include <stdio.h>
int main(){
    for (1;2;3)
        printf("Hello");
}
```

A. Infinite loop

B. Print "Hello" once

C. No output

D. Compile error

11. Given char a[]="XYZ", b[]={'X','Y','Z'}, which of the following statement is correct?
A. Array a has the same length as array b
B. The length of array a is less than the one of array b
C. The length of array a is greater than the one of array b
D. None of the above statement is correct.
12. Given the following code, the binary value of x is

```
char x = 3, y = 6, z;
x = x ^ y << 2;
```

A. 00110100
B. 00011011
C. 00011100
D. 00011000
13. Given int x = 0, *p = &x; the output of the statement printf("%p", &p); is
A. 0
B. address of x
C. Random number
D. Address of p
14. Given char a[]="ABCD", *p = a; then value of *(p+4) is
A. "ABCD"
B. 'D'
C. '\0'
D. random value
15. Given an enumerate definition

```
enum  color {red, green, yellow = 5, white, black}
```

The values of the elements from red to block in the enumerate type color is
A. 1, 2, 3, 4, 5
B. 0, 1, 2, 3, 4
C. 0, 1, 5, 6, 7
D. 3, 4, 5, 6, 7
II. Judge if the statement is correct(1 points * 10, total 10 points)
1. A macro must always be defined in capital letters.
2. A variable declared by keyword extern can be accessed by the code on different files.
3. The output of (printf("%f", (float)(1/2)); is 0.500000.
4. The first argument of main(int argc, char *argv[]) is the number of argument following the command compiled from the program.
5. The value of a variable declared by keyword static inside a function cannot be modified.
6. Suppose int nums[10], then nums[i] has the same effect as *(nums + i)
7. (Cannot be seen clearly.)
8. A string constant is essentially an array of characters.

9. Suppose int i = 10; the value of expression i++ is 10.
10. Suppose int i = 1; after if (!i<1) {i--;}, then value of i is 0.
III. Fill the blanks in the program(3 points * 5, total 15 points)
1. The following program is used to output those integers between 1 to 500 that can be divided by 6.

```
int main(){
    int n;
    for (n=1; n<=500; n++){
        if (n%6 != 0){
            ________
        }
        printf("%d\n", n);
    }
    return 0;
}
```

2. The following program is used to output all the numbers in the array.

```
int main(){
    int a[10] = {0, 1, 2, 3, 4, 5, 6, 7, 8, 9};
    int *p;
    for (p=a, p<=_______; p++){
        printf("%d\n", *p);
    }
    return 0;
}
```

3. Define a macro to calculate the area of a circle

```
#define PI 3.1415926
#define AREA(r) ____________
int main(){
    float r = 5;
    printf("%f", AREA(r));
    return 0;
}
```

4. Calling swap() function

```
void swap(int *m,int *n){
    int temp;
    temp = *m;
    *m = *n;
    *n = tmp;
}
int main(){
    int a = 10, b = 20;
    swap(__________);
    printf("a = %d, b = %d\n",a, b);
    return 0;
}
```

5. Count the number of characters in file abc.txt

```
#include <stdio.h>
int main(){
    FILE *p;
    int count = 0;
    _____________
    while(fgetc(fp) != EOF){
        count++;
    }
    printf("%d\n", count);
    return 0;
}
```

IV. Write C programs to solve given programs(total 30 points)

1. Write a C program to calculate 1! + 2! +...+ 10! (10 points)

2. Write a C program to read a string with at most 100 characters and output the numbers of non-negative numbers, negative numbers and float numbers in the string (20 point)

Sample:

Input: 1a-2.0b3.4o5-6d7

Output: 4, 2, 2

(numbers are : 1, -2.0, 3.4, 5, -6, 7)