电子系程设期末考试题

2020年1月3日

1.

```c
#include <stdio.h>

int main()
{
    int a[3][3] = { 1,3,5,7,9,11,13,15,19 }, i, j,sum1 = 0, sum2 = 0;
    for (i = 0; i < 3; i++)
        for (j = 0; j < 3; j++)
            if (i == j) sum1 += a[i][j];
    for (i = 0; i < 3; i++)
        for (j = 2; j >= 0; j--)
            if (i + j == 2) sum2 += a[i][j];
    printf("%d %d\n", sum1, sum2);
    return 0;
}
```

2.

```c
#include <stdio.h>

struct p
{
    int x[2];
    char c;
};

void f1(struct p b)
{
    b.x[0] = 30; b.x[1] = 40; b.c = 'y';
}

void f2(int x[2])
{
    x[0] = 50; x[1] = 60;
}

int main()
{
    struct p a = { 10, 20, 'x' };
    f1(a);
    printf("%d,%d,%c ", a.x[0], a.x[1], a.c);
    f2(a.x);
    printf("%d,%d,%c\n", a.x[0], a.x[1], a.c);
    return 0;
}
```

3.（输入数据为`HOW DO YOU DO<回车>`）

```c
#include <stdio.h>

int main()
{
    char str1[] = "how do you do";
    char str2[20], str3[20], * p1, * p2, * p3;
    p1 = str1; p2 = str2; p3 = str3;
    scanf("%s", p2);
    gets(p3);
    printf("%s ", p2);
    printf("%s ", p1);
    printf("%s\n", p3);
    return 0;
}
```

4.

```c
#include <stdio.h>

void f(int n, int* s)
{
    int f1, f2;
    if (n == 1 || n == 2)* s = 1;
    else
    {
        f(n - 1, &f1);
        f(n - 2, &f2);
        *s = f1 + f2;
    }
}

int main()
{
    int x;
    f(7, &x);
    printf("%d\n", x);
    return 0;
}
```

5.

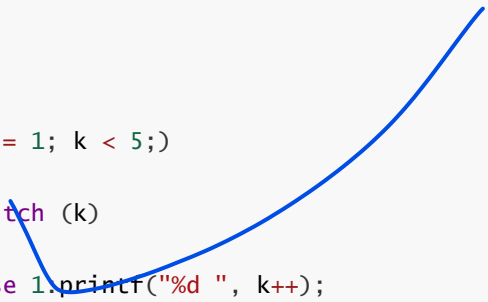
```c
#include <stdio.h>

int main()
{
    int** k, a[6] = { 3,15,17,19,11,5 }, z;
    int* p = a;
    k = &p; z = *p;
    p = p + 1;  z = z + **k;
    printf("%d\n", z);
    return 0;
}
```

6.

```c
#include <stdio.h>

int f(int a, int b)
{
    int c;
    c = a + b;
    return c;
}

int main()
{
    int x = 7, y = 8, z = 9;
    printf("%d\n", f((x++, y--, x + y), z--));
    return 0;
}
```

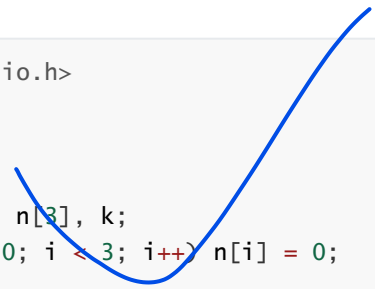
7.

```c
#include <stdio.h>

int main()
{
    int k;
    for (k = 1; k < 5;)
    {
        switch (k)
        {
        case 1:printf("%d ", k++);
        case 2:printf("%d ", k++); break;
        case 4:printf("%d ", k++);
        case 3:printf("%d ", k++); break;
        default: printf("full\n");
        }
    }
    return 0;
}
```



8.

```c
#include <stdio.h>

int main()
{
    int i, j, n[3], k;
    for (i = 0; i < 3; i++) n[i] = 0;
    k = 3;
    for (i = 0; i < k; i++)
        for (j = 0; j < k; j++)
            n[j] = n[i] + 1;
    printf("%d\n", n[1]);
    return 0;
}
```



9.

```c
#include <stdio.h>

int f(int a)
{
    static int c = 2;
    int b = 5;
    b = b + 1; c = c + 1;
    return a + b + c;
}

int main()
{
    int i;
    static int a = 2;
    for (i = 0; i < 3; i++) printf("%d ", f(a++));
    return 0;
}
```

10.

```c
#include <stdio.h>
#define A 4
#define B(x) A*x/2
int main()
{
    int a = 5, b = 6, c;
    c = B(a + b);
    printf("%d\n", c);
    return 0;
}
```

11.

```c
#include <stdio.h>

struct HAP
{
    int x;
    int y;
    struct HAP* p;
} h[2];

int main()
{
    h[0].x = 3; h[0].y = 3;
    h[1].x = 4; h[1].y = 4;
    h[0].p = &h[1];
    h[1].p = h;
    printf("%d%d\n", h[0].p->x, h[1].p->y);
    return 0;
}
```

12.

```c
#include <stdio.h>

int main()
{
    int k = 8, m = 6, a, b, * p1 = &k, * p2 = &m;
    a = *p1 == m;
    b = (-*p1) / (*p2) + 7;
    printf("%d %d\n", a, b);
    return 0;
}
```

13.

```c
#include <stdio.h>

int main()
{
    int a[10] = { 1,2,3,4,5,6,7,8,9,10 };
    int k, s, i;
    float ave;
    for (k = s = i = 0; i < 10; i++)
    {
        if (a[i] % 2 != 0) continue;
        else
        {
            s += a[i];
            k++;
        }
    }
    if (k != 0)
    {
        ave = s / k;
        printf("%d,%f\n", k, ave);
    }
    return 0;
}
```

14.

```c
#include <stdio.h>

int main()
{
    int a[3][2] = { 1,2,3,4,5,6 };
    int* p[3], i, j;
    for (i = 0; i < 3; i++) p[i] = a[i];
    for (i = 1; i < 3; i++)
        for (j = 0; j < 2; j++)
            printf("%d ", *(*(p + i) + j));
    return 0;
}
```

15.

```c
#include <stdio.h>

int main()
{
    int a[4] = { 1,10,20,30 }, b[6] = { 0 }, i;
    FILE* fp;
    fp = fopen("a.dat", "w+b");
    fwrite(a, sizeof(int), 4, fp);
    rewind(fp);
    fread(b, sizeof(int), 2, fp);
    fread(&b[4], sizeof(int), 2, fp);
    for (i = 0; i < 6; i++) printf("%d ", b[i]);
    return 0;
}
```

16.

```c
#include <stdio.h>
#include <malloc.h>

void f(int* p, int(*a)[3], int n)
{
    int i, j;
    for (i = 0; i < n; i++)
        for (j = 0; j < n; j++)
        {
            *p = a[i][j] + 1;
            p++;
        }
}

int main()
{
    int* p, a[3][3] = { {1,3,5},{2,4,6},{7,8,9} };
    p = (int*)malloc(sizeof(int) * 100);
    f(p, a + 1, sizeof(a) / sizeof(a[0]));
    printf("%d %d\n", p[2], p[5]);
    return 0;
}
```

17.

```c
#include <stdio.h>
#include <string.h>

int main()
{
    char st[21] = "hahaa\0\t\'\\";
    printf("%d,%d,%s\n", strlen(st), sizeof(st), st);
    return 0;
}
```

18.

```c
#include <stdio.h>

int f(int(* p)[4], int n)
{
    int i;
    int m;
    m = **p;
    for (i = 1; i < n; i++)
        if (*(*p + i) > m) m = *(*p + i);
    return m;
}

int main()
{
    int a[3][4] = { 1,2,3,4,5,6,7,6,5,4,3,2 }, n = 3 * 4;
    printf("%d\n", f(a, n));
    return 0;
}
```

19.

```c
#include <stdio.h>

int main()
{
    char a[4][5] = { "DCBA", "EFGH", "IJKL", "MNOP" };
    int i;
    for (i = 0; i < 4; i++)
        printf("%c", *(*(a + i) + i));
    return 0;
}
```

注:

1. 内容为回忆版，题目顺序为乱序
2. 不保证与原题完全一致，尤其空格与逗号之类的，但可以确定的是没有需要写多行的
3. 差一题没回忆出来，若有同学能提供所缺题目信息，不胜感激