Structures

Q1 What will be the output of the program?

```
#include <stdio.h>
struct strin {
    char c[5];
    char *s;
};
int main()
{
    struct strin s={"ABCD","EFGH"};
    printf("%s%c\n",s.c,*s.s);
    return 0;
}
```

A. ABCDE
B. DEFGH
C. ABCDF
D. EFGHA

s.s gives "EFGH"
*s.s gives "E"

s.c gives "ABCD"

Answer: (A) ✓

Q2 What will be the output of the program?

```
#include <stdio.h>
struct student {
    char name[20];
    int math;
};
int main()
{
    struct student s={"tom",90};
    struct student *p=&s;
    printf("%s%d\n",p->name,p->math);
    return 0;
}
```

A. 90tom
B. tom90
C. tom
D. 90

Answer: (B) ✓

Q3 What will be the output of the program?

```
#include <stdio.h>
struct s {
```

```
    int a;
    int b;
    char *c;
};
int main()
{
    struct s x={19,83,"Zhang"};
    struct s *px=&x;
    printf("%d,%d,%s,",px->a,(*px).b, px->c);
    printf("%c,%s\n",*px->c-1, &px->c[1]);
    return 0;
}
```

hang

A. 18,83,Zhang,Z,hang
B. 19,83,Zhang,Z,hang
C. 18,83,Zhang,Y,hang
D. 19,83,Zhang,Y,hang

Answer: (D)

Q4 What will be the output of the program?

```
#include <stdio.h>
typedef struct { int b,p; } A;
void f(A c);
int main()
{
    int i;
    A a={1,2};
    f(a);
    printf("%d,%d\n",a.b,a.p);
    return 0;
}
void f(A c)
{
    int j;
    c.b+=1; c.p+=2;
}
```

structure A has two members b,p
variable a is initialized with a={1,2}
function f() does not return any value

therefor a.b and a.p is unchanged.

A. 2,3
B. 2,4
C. 1,4
D. 1,2

Answer: (B) ✗ D

Q5 What will be the output of the program?

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

```
struct stu {
    int x;
    char c;
};
void func(struct stu *b);
int main()
{
    struct stu a={12,'y'}, *p=&a;
    func(p);
    printf("%d,%c\n",a.x,a.c);
    return 0;
}
void func(struct stu *b)
{
    b->x=b->x+9;
    b->c='n';
}
```

A. 12,y
B. 12,n
C. 21,y
D. 21,n

Answer: (D) ✓

Q6 What will be the output of the program?

```
#include <stdio.h>
struct S {int n; int a[20]; };
void f(int *a, int n);
int main()
{
    int i; struct S s={10,{2,3,1,6,8,7,5,4,10,9}};
    f(s.a, s.n);
    for (i=0;i<s.n;i++) printf("%d ",s.a[i]);
    return 0;
}
void f(int *a, int n)
{
    int i;
    for (i=0;i<n-1;i++) a[i]+=i;
}
```

A. 2 4 3 9 12 12 11 11 18 9
B. 3 4 2 7 9 8 6 5 11 10
C. 2 3 1 6 8 7 5 4 10 9
D. 1 2 3 6 8 7 5 4 10 9

Answer: (A) ✓

Q7 What will be the output of the program?

```
#include <stdio.h>
int main()
{
    struct emplx { int x; int y; } num[2] = { 1,3,2,7 };
    printf("%d\n", num[0].y/num[0].x*num[1].x);
    return 0;
}
```

A. 0
B. 1
C. 3
D. 6

Answer: (D)

Q8 What will be the output of the program ?

```
#include <stdio.h>
struct st
{
    int x,y;
} data[2]={1,10,2,20};
int main()
{
    struct st *p=data;
    printf("%d,",p->y);
    printf("%d\n",(++p)->x);
    return 0;
}
```

A. 10,1
B. 20,1
C. 10,2
D. 20,2

Answer: (C)

Q9 What will be the output of the program?

```
#include <stdio.h>
struct stu
{  char num[10]; int score[3];  };
int main()
{
    struct stu s[3] = { {"20021",90,95,85},
```

```
                        {"20022",95,80,75},
                        {"20023",100,95,90} };
    struct stu *p=s;
    int i; int sum=0;
    for (i=0; i<3; i++)
        sum = sum+p->score[i];
    printf("%d\n",sum);
    return 0;
}
```

i = 0, 1, 2

A. 260
B. 270
C. 280
D. 285

Answer: (B)

Q10 What will be the output of the program?

```
#include <stdio.h>
struct str1
{ char c[5]; char*s; };
int main()
{
    struct str1 s1[2] = {
        { "ABCD", "EFGH" },
        { "IJK", "LMN" }
    };
    struct str2 {
        struct str1 sr;
        int d;
    } s2 = {"OPQ", "RST", 32767};
    struct str1 *p[2];
    p[0]=&s1[0];
    p[1]=&s1[1];
    printf("%s ", ++p[1]->s);
    printf("%c", s2.sr.c[2]);
    return 0;
}
```

MN

variable s1 is an array of 2 elements
variable s2 is a structure variable with two members sr and d. p is defined as an array of 2 pointers to structure str1.

p[0] = s1[0] = {"ABCD","EFGH"};
p[1] = s1[1] = {"IJK","LMN"}
++p[1] ->s is "MN"

p[1]->s is "LMN"

A. LMN O
B. MN Q
C. N P
D. IJK R

Answer: (B)