

C 8 Structure Bitfield Union(07-12-2023)

```
1. #include <stdio.h>
struct S
{
    char *p;
};
int main(void)
{
    char *p = "abcd";

    struct S S[2];

    int i;

    for(i = 0; i < 2; i++)
        S[i].p = p + i;

    printf("%c",S[1].p[1]);

    return 0;
}
```

Answers

1. a
2. b
3. c
4. d

2. What is the correct syntax to declare bit-field in structure?

Answers

1. struct temp


```

      {
          unsigned int a : 1;
      }s;
      
```
2. struct temp


```

      {
          unsigned int a = 1;
      }s;
      
```
3. struct temp


```

      {
          unsigned float a : 1;
      }s;
      
```
4. None of the mentioned

3. What will be the output?

```

#include<stdio.h>
union test
{
    short int num;
    char ch[2];
};
int main()
{
    union test ut;
    ut.num = 325;
    char *ch = ut.ch ;
    printf("%d \t %c\n", ch[0],(char)ut.num);
    return 0;
}

```

Answers

1. 32 5
2. 69 5
3. 69 E
4. 516 E

4. What will be the output of following program ?

```

#include <stdio.h>
struct sample
{

```

```

    int a=1;
    char b='S';
    float c=11.5;
};
int main()
{
    struct sample s;
    printf("%d,%c,%f",s.a,s.b,s.c);
    return 0;
}

```

Answers

1. Error

2. 1,S,11.5

3. 1,S,11.500000

4. No Error , No Output

```

5. #include <stdio.h>
int main()
{
    union values
    {
        unsigned char a;
        unsigned char b;
        unsigned int c;
    };

    union values val;
    val.a=0;
    val.b=0;
    val.c=1;

    printf("%d,%d,%d",val.a,val.b,val.c);
    return 0;
}

```

Answers

1. 0,0,1

2. Error

3. 1,1,1

4. 1,0,0

6. Predict The Output?

```
#include <stdio.h>
struct bitfield
{
    int y : 5;
    char x : 5;
};
int main()
{
    struct bitfield p;
    p.x = 2;
    p.y = 1;
    p.x = ~(p.x << p.y);
    printf("%d\n", p.x);
}
```

Answers

1. -5

2. 2

3. 1

4. 5

7. What is the output of this C code?

```
#include <stdio.h>
struct p
{
    int k;
    char c;
    float f;
};
int main()
{
    struct p x = {.c = 166, .f = 3, .k = 1};
    printf("%f\n", x.f);
}
```

Answers

1. 3.000000

2. Compile time error

3. Undefined behavior

4. 1.000000

8. What will be the output?

```
#include <stdio.h>
union test
{
    unsigned int x: 3;
    unsigned int y: 3;
    int z;
};
int main(void)
{
    union test t;
    t.x = 5;
    t.y = 4;
    t.z = 18;
    printf("%4d %4d %4d\n", t.x, t.y, t.z);
    return 0;
}
```

Answers

1. 5 5 18

2. 2 2 18

3. 4 4 18

4. 5 4 18

9. #include <stdio.h>

```
int main()
{
    union test
    {
        int i;
        int j;
    };

    union test var=10;
    printf("%d,%d\n",var.i,var.j);
}
```

Answers

1. 10,10

2. 10,0

3. 0,10

4. Error

10. What will be the Output?

```
#include <stdio.h>
struct point
{
    int x;
    int y;
};
void print(struct point*);
int main()
{
    struct point p1[] = {1, 2, 3, 4};
    print(p1);
}
void print(struct point p[])
{
    printf("%d %d %d %d\n", p->x, ++p->x, p->y, ++p->y);
}
```

Answers

1. 2 2 3 3

2. 1 2 2 3

3. CompileTime Error

4. Runtime Error