Two-dimensional Arrays

Q1 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int i,j,a[2][3]={ {2,4,6}, {8,10,12} };
   for (i=0;i<3;i++)
   {
      for (j=0;j<2;j++)
         printf("%d ", a[j][i]);
      printf("\n");
   }
   return 0;
}
```

A.
2 8
4 10
6 12
B.
4 10
6 8
2 12
C.
6 10
4 12
2 8
D.
4 10
2 8
6 12

Answer: (A)

Q2 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int a[3][3]={ 1,3,6,7,9,11,14,15,17 };
   int s=0,i,j;
   for (i=0;i<3;i++)
      for (j=0;j<3;j++)
         if (i==j) s=s+a[i][j];
   printf("%d\n",s);
   return 0;
}
```

A. 25
B. 26
C. 27
D. 28

Answer: (C)

Q3 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int a[2][3]={ {1,2,3}, {4,5,6} };
   int b[3][2],i,j;
   for (i=0;i<=1;i++)
      for (j=0;j<=2;j++)
         b[j][i]=a[i][j];
   for (i=0;i<=2;i++)
   {
      for (j=0;j<=1;j++)
         printf("%d ",b[i][j]);
      printf("\n");
   }
   return 0;
}
```

A.
1 4
2 5
3 6

B.
1 6
2 5
3 4

C.
3 4
2 5
1 6

D.
3 6
2 5
1 4

Answer: (A)

Q4 What will be the output of the program?

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

```
int main()
{
   int a[3][3],*p,i;
   p = &a[0][0];
   for (i=0;i<9;i++) p[i]=i+1;
   printf("%d\n", a[1][2]);
   return 0;
}
```

A. 3
B. 6
C. 9
D. 2

Answer: (B)

Q5 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int a[3][4] = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 };
   printf("%d,%d", *(a[0]+1), *(*(a+0)+1));
   return 0;
}
```

A. 4,4
B. 4,2
C. 2,2
D. Error

Answer: (D)

Q6 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int a[3][4] = { 1,3,5,7,9,11,13,15,17,19,21,23 };
   int *p,i;
   for (p=a[0],i=0; i<12; p++,i++)
   {
      if (i%4 == 0) printf("\n");
      printf("%d ", *p);
   }
   return 0;
}
```

A.
1 3 5 7

```
9 11 13 15
17 19 21 23
B.
3 5 7 9
9 11 13 15
17 19 21 23
C.
1 3 5 7
11 13 15 17
17 19 21 23
D.
1 3 5 7
9 11 13 15
15 17 19 21
```

Answer: (A) ✓

Q7 What will be the output of the program?

```
#include <stdio.h>
int main()
{
   int a[2][3] = { {1,2,3}, {4,5,6} };
   int m, *ptr;
   ptr=&a[0][0];
   m = (*ptr)*(*(ptr+2))*(*(ptr+4));
   printf("%d\n", m);
   return 0;
}
```

1 x 3 X 5

A. 14
B. 15
C. 16
D. 17

Answer: (B) ✓

Q8 What will be the output of the program?

```
#include <stdio.h>
#define N 4
void fun(int a[][N], int b[]);
int main()
{
   int x[][N] = { {1,2,3},{4},{5,6,7,8},{9,10}},y[N],i;
   fun(x,y);
   for (i=0;i<N;i++) printf("%d ",y[i]);
   printf("\n");
```

```
   return 0;
}
void fun(int a[][N], int b[])
{
   int i;
   for (i=0;i<N;i++) b[i]=a[i][i];
}
```

A. 1 2 3 4
B. 1 0 7 0
C. 1 4 5 9
D. 3 4 8 10

Answer: (B)

Q9 What will be the output of the program?

```
#include <stdio.h>
void fun(int *p);
int main()
{
   int a[3][4] = {1, 2, 3, 4, 4, 3, 2, 8, 7, 8, 9, 0};
   int *ptr;
   ptr = &a[0][0];
   fun(ptr);
   return 0;
}
void fun(int *p)
{
   printf("%d %d %d", *p, *(p+4), *(p+8));
}
```

A. 1 4 7
B. 2 3 8
C. 3 2 9
D. 4 8 0

Answer: (A)

Q10 What will be the output of the program?

```
#include <stdio.h>
int fun(int s[][4], int n, int k);
int main()
{
   int a[4][4] =
{ {1,2,3,4},{11,12,13,14},{21,22,23,24},{31,32,33,34}};
   printf("%d\n",fun(a,4,0));
   return 0;
```

```
}
int fun(int s[][4], int n, int k)
{
   int m,i;
   m=s[0][k];
   for (i=0;i<n;i++)
      if (s[i][k]>m) m=s[i][k];
   return m;
}
```

A. 4
B. 34
C. 31
D. 32

Answer: (C)