

For each question below, you can assume that the sizes of the data types (in bytes) are as follows: **char** = 1, **short** = 2, **int** = 4, **long** = 8, **float** = 4, **double** = 8, and pointers are 8 bytes.

1. What is the type of each constant value below?

- a) 100
- b) 10.0
- c) 34U
- d) -13L
- e) 100LU
- f) 24.2F
- g) 42.0L
- h) 'A'

2. Given the valid variable definitions below, what are the resulting types of the 4 expressions?

```
int i; char c; float f; double d;
```

- a) `i * f + c;`
- b) `f / d;`
- c) `10 * c;`
- d) `i + c + f + d;`

3. What does the code below print? (Hint: The code is legal and compiles just fine.)

```
int a[] = {3, 4, 'A', 'B', 0, 'C', 'D'};  
int i = 0;
```

```
printf("%i", sizeof(a)); a) _____
```

```
while (a[i])  
    printf("%i", a[++i]); b) _____
```

4. Given the code below, fill in the blank with the expression that will read the last element from the array **X**.

```
int X[5] = {5, 10, 15, 20, 100};
```

```
printf("Last value is %i", _____ );
```

5. Given the declarations below, determine the **sizeof** each expression All expressions are valid.

```
short int a[5];  
long int b[10];  
int c[] = {0, 0, 0};  
double *d;  
short int *e;
```

- a) `sizeof(a)`
- b) `sizeof(b)`
- c) `sizeof(c)`
- d) `sizeof(d)`
- e) `sizeof(e)`
- f) `sizeof(a[2])`
- g) `sizeof(a[-10])`
- h) `sizeof(*c)`
- i) `sizeof(*d)`