

OOS PART 1 – BASIC C++

Exercise Sheet 3 – Basic Pointer Test

This lab's exercises are slightly different and emphasise that you must understand pointers to move on to the next part of the module. What follows are 13 pointers test questions which you must complete in the following manner: read a question decide on the correct response (if you are uncertain refer to the lecture notes) and only when you have made a decision enter the code fragment into a program and test the real result. In each case always decide the answer before you test the program. Exercises 14 and 15 are not pointer based, *but will test the C++ you have learned up to now* - consideration of appropriate function use and an overall design is vital!

Exercises

1. `int a;
int* p;`

```
a = 2;  
p = &a;  
a = a + 1;  
cout << *p;
```

a) 2 b) 3 c) Won't run

2. `int a;
int* p;`

```
a = 2;  
p = a;  
a = a + 2;  
cout << *p;
```

a) 2 b) 4 c) Won't run

3. `int a;
int b;
int* p;`

```
p = &a;  
*p = 4;  
p = &b;  
*p = 3;  
cout << a << " " << b;
```

a) 4 3 b) 3 3 c) Won't run

4. `int a;
int b;
int* p;
int* q;`

```
a = 3;  
p = &a;  
q = p;  
*q = *q + 5;  
cout << *p;
```

a) 8 b) 3 c) Won't run

5. `int a;
int* p;`

```
a = 4;  
p = &a;  
cout << (*p) / a;
```

a) 1 b) 4 c) Won't run

6. `string s;
string* p;`

```
s = "Fred Jones";  
p = &s;  
cout << *p;
```

a) Fred Jones b) Fred c) A hexadecimal memory address

7. `string s;
int* i;`

```
s = "Fred Jones";  
i = &s;  
cout << *i;
```

a) Fred Jones b) A garbage number c) Won't run

8. `function doubleref(int* p) {(*p) = (*p) * 2;}`

```
int main()  
{  
    int a = 5;  
    doubleref(&a);  
    cout << a;  
}
```

a) 5 b) 10 c) Won't work

9. `int a;
int b;
int* p;
int* q;`

```
a = 3;  
p = &a;  
q = p;  
b = 4;  
*q = b;  
cout << *p << a;
```

a) 4 3 b) 3 4 c) 4 4

10. `int a;
int* p;`

```
a = 3;  
p = &a;  
cout << p;
```

a) 3 3 b) A hexadecimal memory address c) Won't run

11. `int a;
int* p;`

```
a = 4;  
p = &a;  
cout << (*p+1);
```

a) 4 b) 5 c) Random Garbage

12. `int a;
int* q;`

```
a = 4;  
q = &a;  
cout << *(q+1);
```

a) 4 b) 5 c) Random Garbage

13. `int a;
int* p;
char b;`

```
a = 52;  
p = &a;  
b = *p;  
cout << b;
```

a) 52 b) A c) Won't Run