CS 120 Practice Paper (Edward's)

1. a) &(p[5])
   b) p[2]+4
   c) p[0]-1
   d) NC, & only works on lvalues

2. unsigned int* foo (const unsigned int*, int);

3. a=b

4. ```
   int i=0;
   for (i=1; i<=5; ++i)
   {
       printf(" %d", i);
   }
   ```

5. one two three

6. 60

7. ELSE

8. ELSE

9. 1

10. 0

11. 1

12. a) int (*foo)(int);
    b) int* foo(int*);

13 It cannot compile as a is of type array and cannot directly increment it

14 int my_isalpha (char c)
{
    return c>='a' && c<='z' || c>='A' && c<='Z';
}

15 int my_isupper (char c)
{
    return c>='A' && c<='Z';
}

16 void my_tolower (char * c)
{
    if (*c>='A' && c<='Z')
    {
        *c -= ('A'-'a');
    }
}

a)
17 #include <stdlib.h>
   int * allocate (size_t n)
   {
       int* ptr = (int*) malloc (n);
       return ptr;
   }

b) void foo()
   {
       int* parr = allocate(15);
       free (parr);
   }

18 Malloc may not be successful

Can cause memory leak if not freed

19 void ExpandString(char* dst, const char* src, size_t tab_size)
```
{
    while (*src != '\0')
    {
        if (*src == '\t')
        {
            int i=0;
            for (i=0; i<tab_size; i++)
            {
                *dst = ' ';
                dst++;
            }
        }
        else
        {
            *dst = *src;
        }
        dst++;
        src++;
    }
}
```

```
21  void countWhitespace (const char* file, int* space, int* tab, int* newline)
    {
        *space = 0;
        *tab = 0
        *newline = 0;
        FILE* fp;
        fp = fopen (file, "r");
        char c;
        while ( fscanf (fp, "%c", &c))
        {
            if (c == ' ') (*space)++;
            else if (c == '\t') (*tab)++;
            else if (c == '\n') (*newline)++;
        }
        fclose (fp);
    }
```

22 a) Illegal, no struct before TIME
   b) Legal
   c) Legal
   d) Legal

23 16

26 1. D
   2. B
   3. H
   4. B
   5. B
   6. M
   7. L.
   8. M
   9. M
   p. 1

22 11.k

12.C

27 hunt