Your Name: _____   TA's Name: _____
ID#: _____   Section #: _____

Take Home: Quiz 1 (15 pts) - Review of C Language Concepts

1. (5 pts) Write/Implement a function definition for a function `my_strcpy()` with the following header:

```
char *my_strcpy (char *destination, const char *source)
```

```
char *my_strcpy (char *destination, const char *source) {
    // Get size of src string (w/ '\0')
    int size = 1;
    while (source[size - 1] != '\0')
        size ++;
    // Allocate memory for destination
    destination = malloc(sizeof(char) * size);
    // Assign value to destination
    for (int i = 0; i < size; i ++)
        destination[i] = source[i];
    return destination;
}
```

2. (5 pts) Write/Implement a function definition for a function `my_strncat()` with the following header:

```
char *my_strncat (char *destination, const char *source, int n)
```

```
char *my_strncat (char *destination, const char *source, int n) {
    // Get size of src string (w/o '\0')
    int size = 1;
    while (destination[size] != '\0')
        size ++;
    // Create new string (+1 for space of '\0')
    char *newString = malloc(sizeof(char) + (size + n + 1));
    // Copy destination to newstring
    for (int i = 0; i < size; i ++)
        newString[i] = destination[i];
    // Copy source to newstring
    for (int i = size; i < (size + n); i ++) {
        newString[i] = *source;
        // If encounter a NULL in source, break the loop
        if (*source == '\0')
            break;
        else
            source ++;
    }
    // Add '\0' at the end:
    newString[size + n] = '\0';
    return (newString);
}
```

3. (5 pts) Write/Implement a function definition for a function `my_strcmp()` with the following header:

```
int my_strcmp (const char *s1, const char *s2)
```

```
int my_strcmp (const char *s1, const char *s2) {
    do {
        if (*s1 < *s2)
            return -1;
        else if (*s1 > *s2)
            return 1;
    } while (*s1 ++ == *s2 ++);
    return 0;
}
```