

ID:

Daffodil International University

Course Code: CSE113 | Course Title: Programming & Problem Solving
Section: 70_L | Time: 35 Minutes | Marks: 15

Quiz - 2

1. Consider the following C code and find out the syntax errors. You must also state [4]
the reason for each error:

```

1  #include <stdio.h>
2  #include <string.h>
3
4  struct Data {
5      int id, char name[20]; int *ref;
6  }
7
8  int modify(struct data d, int x) {
9      *(d.ref) += x;
10     return (d_id + x) + *(d.ref);
11 }
12
13 int main() {
14     int val = 10;
15     struct Data d1 = {5, "Alpha", &val}, d2 = d1;
16
17     int r1 = modify(d1, 3);
18     int r2 = modify(*d2, -2);
19
20     printf("%d %d %d %d\n", r1, r2, d1.id, val);
21     return 0;
22 }
```

2. Consider the following C code and trace the output: [6]

```

1  #include <stdio.h>
2
3  int helper(int x) {
4      if (x <= 1) {
5          printf("helper(%d) → base case\n", x);
6          return x + 1;
7      }
8      printf("helper(%d) calling helper(%d)\n", x, x - 2);
9      return helper(x - 2) + x;
10 }
11
12 int compute(int a, int b) {
13     printf("compute(%d, %d) called\n", a, b);
14     int p = helper(a);
15     int q = helper(b);

```

```

16
17     printf("p = %d, q = %d\n", p, q);
18
19     return p - q + helper(p - q);
20 }
21
22 int main() {
23     int x = 5, y = 4;
24     int ans = compute(x, y);
25
26     printf("%d\n", ans);
27     return 0;
28 }

```

3. A company wants to store and calculate the total salary of its employees. Each [5]
employee has an ID, a basic salary, and years of experience. The company gives a
bonus of 1500 Taka per year of experience. Write a C program using a structure to

read the employee details and calculate the total salary the company needs to pay for the next month.

Sample Input	Sample Output
3 752001 57000 2 752002 63000 0 752001 40220 1	164720