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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 the reason for each error: **[4]**

```
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 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 **[5]**

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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