

PDC Quiz 3: Max time allowed: 15 minutes, Max points: 100, Section: 6C

50

Name: [REDACTED]

Roll No: [REDACTED]

(Question 1) Carefully read the following openmp code and identify 10 errors. Circle line number where you find error. Then write to-the-point one liners to tell what the error is.

```

1 // quiz3.c file
2 #include <stdio.h>
3 int main() {
4     int i, sum = 0;
5     int data[10] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
6     omp_set_num_threads();
7     #pragma omp parallel for reduction(+:sum)
8     {
9         for (i = 0; i < 10; i++) {
10             sum += data[i];
11         }
12     }
13     int counter = 0;
14     #pragma omp parallel for
15     for (i = 0; i < 10; i++) {
16         counter++;
17     }
18     #pragma omp for
19     for (int k = 0; k < 10; k++) {
20         printf("Quiz 3: %d\n", k);
21     }
22     #pragma omp parallel for
23     for (int k = 0; k < 10; k++) {
24         k++;
25     }
26 }
27
28 On command line do: export SET-NUM-THREADS 4
29 Compile: gcc -o quiz3.o -Wall -fopenmp quiz3.c

```

① X
 ② ✓
 ③ X
 ④ X
 ⑤ X
 ⑥ X
 ⑦ X
 ⑧ X
 ⑨ X
 ⑩ X
 ⑪ X
 ⑫ X
 ⑬ X
 ⑭ X
 ⑮ X
 ⑯ X
 ⑰ X
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has to be shared, is private
 num threads not written
 This has to be before the loop being written
 & wrong value of sum due to wrong parallelization of reduction
 has to be atomic expression
 has to be inside parallel region
 possible wrong value of counter
 loop values cannot be manipulated inside parallel region
 the command line setting of num threads is wrong
 -fopenmp is no argument, -fopenmp is