COMP 248 F2011 Test 4 Sample Solution

Question 1

(A) b)

(B) a)

(C) d)

(D) b)

Question 2

(A)
```
0 0 0
50 0 0
50 10 2
0 0 0
0 40 0
```

(B)
```
public void stop() {
        speed = 0;
}
```

(C)
```
public boolean isGoingFasterThan(int speed) {
        return this.speed > speed;
}
```

(D)
```
if (bike1.isGoingFasterThan(35)) {
        System.out.print("slow down");
}
```

Question 3

(A) b e f

(B) Given 2 arrays of characters, the code displays characters which are only present in the first array but not in the second one.

Question 4

(A)
```
int matrix[][] = new int[N][N];
```

(B)
```
for (int i = 1; i <= N * N; i++) {
        int frequency = 0;

        for (int j = 0; j < matrix.length; j++) {
                for (int k = 0; k< matrix[j].length; k++) {
                        if (matrix[j][k] == i) {
                                frequency++;
                        }
                }
        }

        if (frequency > 1) {
                System.out.println("The matrix is not quasi-magic because the
                digit " + i + " appears " + frequency + " times");
                break;
        }
}
```

(C)
```
int previousSum = 0;
int currentSum = 0;

for (int i = 0; i < matrix.length; i++) {
        for (int j = 0; j < matrix[i].length; j++) {
                currentSum += matrix[i][j];
        }

        if (i != 0 && currentSum != previousSum) {
                System.out.println("The matrix is not quasi-magic, because row " +
                (i) + " adds up to " + previousSum + ", and row " + (i + 1) + " adds
                up to " + currentSum);
                break;
        }

        previousSum = currentSum;
        currentSum = 0;
}
```