76.WRITE A PROGRAM CLOSEST PAIR
PROGRAM:-

```
import math

def distance(point1, point2):
    return math.sqrt((point1[0] - point2[0]) ** 2 + (point1[1] - point2[1]) ** 2)

def closest_pair(points):
    min_dist = float('inf')
    pair = (None, None)

    for i in range(len(points)):
        for j in range(i + 1, len(points)):
            dist = distance(points[i], points[j])
            if dist < min_dist:
                min_dist = dist
                pair = (points[i], points[j])

    return pair, min_dist

# Example usage
if __name__ == "__main__":
    points = [(2, 3), (12, 30), (40, 50), (5, 1), (12, 10), (3, 4)]

    print("Points:")
    print(points)

    closest, dist = closest_pair(points)

    print(f"Closest pair: {closest}")
    print(f"Distance: {dist:.2f}")
```

OUTPUT:-

```
Points:
[(2, 3), (12, 30), (40, 50), (5, 1), (12, 10), (3, 4)]
Closest pair: ((2, 3), (3, 4))
Distance: 1.41

=== Code Execution Successful ===
```

TIME COMPLEXITY:-$O(n^2)$