Islamic university of Technology (IUT)

Department of NSc: Assignment-1 (Winter 2023-24)

Programme: B.Sc. in CSE

Course: Math 4541 (MC&CV)

Marks: 15 Date of Submission: 23/10/2024

1. Compute the circulation and net flux for the flow $F(x, y) = (4x + 3y)i + (2x - y)j$ and along indicated closed contour C,
   where C is the circle $x^2 + y^2 = 4$.
2. Evaluate the given integral along the indicated closed contour(s).
   $\oint_C \frac{z^2}{z^2+4} dz$ (i) $|z - i|=2$ (ii) $|z + 2i| = 1$
3. Evaluate the given integral along the indicated closed contour(s).
   $\oint_C \frac{z+2}{z^2(z-1-i)} dz$ (i) $|z|=1$ (ii) $|z - 1 - i| = 1$