

Math 302 – 02      Quiz 4

(A)

Name:.....Serial#:.....

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**Q.1:** Evaluate  $\iint_{\Sigma} (\nabla \times \mathbf{F}) \cdot \hat{n} \, d\sigma$ , where  $\mathbf{F} = xy \mathbf{i} + yz \mathbf{j} + xz \mathbf{k}$ ,  $\Sigma$  is the part of the plane  $2x + 4y + z = 8$  in the first octant.

**Q.2:** Show that for any complex numbers  $z$  and  $w$ ,  $|z + w|^2 + |z - w|^2 = 2(|z|^2 + |w|^2)$

**Q.3:** Transform the equation  $|z + 1 + 6i| = |z - 3 + i|$  into rectangular form and write its slope and  $y$ -intercept.