

**Prabhat Kumar College, Contai**

**Department of Mathematics**

**2<sup>nd</sup> Year Mathematics (Hons) Annual Pattern**

**Paper: 3**

**Time: 1 hours**

Answer any one :-

1. Verify stokes theorem for the vector function  $F = (x^2 - y^2)\vec{i} + 2x\vec{j}$  round the rectangle bounded by the straight lines  $x = 0, x = a, y = 0$  and  $y = b$ .
2. Find the surface generated by the lines which intersect the lines  $y = mx, z = c$  and  $y = -mx, z = -c$  and  $x - axis$ .
3. Prove that the set of feasible solutions of  $Ax = B, x \geq 0$  is a closed convex set.