King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-301 Semester-132 QUIZ I

NAME: S.No. ID:

Maximum Marks: 10 Section:06 Time Allowed: 40 minutes

(1) If $u = x^2z$ and $v = xz^2 - 2y$, then find $grad[(grad\ u).(grad\ v)]$.

(2) If $\mathbf{F}(x, y, z) = xye^z\mathbf{i} + yze^x\mathbf{j} + xze^y\mathbf{k}$, find $curl\ \mathbf{F}$ and $div(curl\ \mathbf{F})$.

(3) Evaluate $\int_C xyz\ dx - cos(yz)\ dy + xz\ dz$ over the straight line segment from $(1, 1, 1)$ to $(-2, 1, 3)$.

(4) Evaluate $\int_C xy\ dx - x\ dy$, where C is given by $y = x^3, -1 \leq x \leq 2$.