King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-301 Semester-142 QUIZ I

NAME: S.No. ID:

Maximum Marks: 10 Section:06 Time Allowed: 30 minutes

(1) Find the length of the curve $C : \mathbf{r}(\mathbf{t}) =< 2\sqrt{2}t, e^{2t}, e^{-2t}, -1 \leq t \leq 1$.

(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 $(-2, 1, 3)$.