King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math-302 Semester-133 QUIZ II

NAME: S.No. ID:

Maximum Marks: 10 Section:02 Time Allowed: 30 minutes

(1) Find points on the surface $x^2 + 4x + y^2 + z^2 - 2z = 11$ at which tangent plane is horizontal.

(2) Let $\mathbf{r} =< x, y, z >$ and $\mathbf{a}$ be a constant vector. Then verify the identity

$$\nabla.[(\mathbf{r}.\mathbf{r})\mathbf{a}] = 2(\mathbf{r}.\mathbf{a})$$

(3) Evaluate $\oint_C (x^2 + y^2)dx - 2xydy$ on the closed curve