$$\nabla \times F = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial y} & \frac{\partial}{\partial z} \\ 2xyz^2 & x^2z^2 + z\cos yz & 2x^2yz + y\cos yz \end{vmatrix} = 0 \quad \text{(check)}$$

$\Rightarrow \exists$ a scalar potential such that $[\nabla\phi = F]$

$$\frac{\partial\phi}{\partial x} = 2xyz^2 \qquad \frac{\partial\phi}{\partial y} = x^2z^2 + z\cos yz \qquad \frac{\partial\phi}{\partial z} = 2x^2yz + y\cos yz$$

$$\phi_1 = x^2yz^2 \qquad \phi_2 = yx^2z^2 + \sin yz \qquad \phi_3 = x^2yz^2 + \sin yz$$

$$\phi = \phi_1 \cup \phi_2 \cup \phi_3$$

$$\boxed{\phi = x^2yz^2 + \sin yz}$$

Thus $\int_C F \cdot dr = \phi(1,0,1) - \phi(0, \frac{\pi}{2}, 1)$

$= [0+0] - [0+1] = \boxed{-1}$