$$\int_C z\,dx + x\,dy + y\,dz = \int_0^1 t^5 \cdot 5t^4\,dt + t^5 \cdot 3t^2\,dt + t^3 \cdot 5t^4\,dt$$
$$= \int_0^1 (5t^9 + 8t^7)\,dt = \left[\tfrac{1}{2}t^{10} + t^8\right]_0^1 = \tfrac{3}{2}$$