

NAME: NIDDERLINDA DEAR TOURENI
MATHS: 17/01/2021/036
DEPT: TECHNICAL ENGINEERING
SEMESTER: 01

77A192 - 0890001

$$\textcircled{1} \quad A = (6u^2 + 8)\mathbf{i} + (4u - 10)\mathbf{j} + 20u^3\mathbf{k}$$
$$B = (3u)\mathbf{i} + (2u - 7)\mathbf{j} + 5\mathbf{k}$$

$$A \cdot B = 3u(6u^2 + 8) + (4u - 10)(2u - 7) + 5u^3(20)$$
$$= 18u^3 + 24u + 8u^2 - 20u - 20u + 50 + 90u^3$$
$$= 38u^3 + 8u^2 - 16u + 50$$

$$\frac{d(A \cdot B)}{du} = 114u^2 + 16 - 10$$

$$\frac{dA}{du} = (12u)\mathbf{i} + 4\mathbf{j} + (60u^2)\mathbf{k}$$