19/ENG04/024

MAT102

IDATA ANTHONY EHINOMEN

Electrical Electronics

i) $A = (6u^2 + 8)i + (4u - 10)j + 8u^2k$

$B = 3ui + (2u - 5)j + 5k$

ii) $\frac{d(A \cdot B)}{du}$

Soln

$A \cdot B = ((6u^2 + 8) \cdot 3u)i + ((4u - 10) \cdot (2u - 5))j + (8u^2k \cdot 5)k$

$= (18u^3 + 24u)i + (8u^2 + 50) + 40u^3$

$= 58u^3 + 8u^2 + 24u + 50$

$\therefore \frac{d(A \cdot B)}{du} = 174u^2 + 16u + 24$

ii) $\frac{dA}{dU} = 12ui + 4u + 24u^2k$