

**TOPIC**

Mathematics – Section I – Question 19

**QUESTION**The dot product of two vectors  $\vec{A}$  and  $\vec{B}$ 

$$\vec{A} = 3i + 5j + 7k$$

$$\vec{B} = 11i + 13j + 17k$$

most nearly is

(A) 14.80

(B) 33

(C) 56

(D) 219

**HINT**The dot product of two vectors  $\vec{u} = (u_x, u_y, u_z)$  and  $\vec{v} = (v_x, v_y, v_z)$  is

$$\vec{u} \cdot \vec{v} = u_x v_x + u_y v_y + u_z v_z$$

**SOLUTION**The dot product of two vectors  $\vec{u} = (u_x, u_y, u_z)$  and  $\vec{v} = (v_x, v_y, v_z)$  is

$$\begin{aligned}\vec{u} \cdot \vec{v} &= u_x v_x + u_y v_y + u_z v_z \\ &= 3 \times 11 + 5 \times 13 + 7 \times 17 \\ &= 219\end{aligned}$$

**ANSWER**

(D)

**CONTRIBUTOR**

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