

⊛ Given sequence: AGGCGTTG

Based on table of slide

$$\begin{aligned} \text{Probability, } P(\underline{A} \underline{G} \underline{G} \underline{C} \underline{G} \underline{T} \underline{T} \underline{G}) &= P(\underline{A} / \text{Begin}) \times P(\underline{G} / \underline{A}) \times \\ &P(\underline{G} / \underline{G}) \times P(\underline{C} / \underline{G}) \times P(\underline{G} / \underline{C}) \times \\ &P(\underline{C} / \underline{G}) \times P(\underline{T} / \underline{C}) \times P(\underline{T} / \underline{T}) \times \\ &P(\underline{G} / \underline{T}) \times P(\underline{\text{End}} / \underline{T}). \end{aligned}$$

$$= 0.25 \times 0.43 \times 0.35 \times 0.34 \times 0.27$$

$$\times 0.34 \times 0.14 \times 0.18 \times 0.38 \times 0.25$$

$$= 0.000004142$$

∴ Probability of the sequence is 0.000004142.

(Answer)

