Geography · GS - I

What is the Fujiwhara effect? Explain its impact on the movement and intensity of tropical cyclones.

EXAM YEAR	PAPER	SUBJECT
2026	GS - I	Geography

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Interaction of two cyclonic vortices, close proximity, rotation around common centre, cyclonic movement, merging, trajectory alteration, intensity changes, forecasting challenges

Model Answer

The **Fujiwhara effect** refers to the interaction between two tropical cyclonic vortices when they come sufficiently close to each other. Instead of moving independently, the cyclones begin to **rotate cyclonically around a common centre**.

The effect can significantly alter the **movement and intensity** of tropical cyclones. Their tracks may curve, accelerate, decelerate or deviate from their earlier trajectories, making landfall prediction more difficult. Depending on their relative size, intensity and distance, the systems may either continue interacting or eventually **merge into a single stronger circulation**.

In some cases, the interaction can weaken one cyclone by disrupting its circulation, while in others, a merger or favourable atmospheric conditions may result in intensification. The effect is therefore particularly important when multiple cyclones develop over warm tropical oceans within a relatively short distance.

The Fujiwhara effect has major implications for **disaster preparedness and cyclone forecasting**, as conventional track models may become less reliable during strong interactions.

Thus, understanding the Fujiwhara effect is crucial for accurately predicting cyclone trajectories, intensity and potential hazards to coastal populations.