

**Q. 4. Write a note on homing in pigeons.**

**Write an essay on navigation in birds migration.**

*(Poorvanchal 2000)*

By experiments it has been established that pigeons on their way back home use a **map and compass strategy**. Sun or earth's magnetic field is used as a compass for navigation.

**1. Sun Compass :** Pigeons and other birds are able to compensate for sun's movements and use the sun to give them a compass to navigate. Sun compass is used only during bright sunny days.

This was demonstrated by tricking the pigeons by misguiding them about the time, exposing them to artificial light conditions. When the birds were released north of their loft, they flew roughly west or east, while during normal daytime, pigeons fly southwards.

**2. Magnetic Compass :** When the sky is overcast and sun is not visible birds are found to utilize earth's magnetic field as a compass. This can be demonstrated by surrounding the pigeons head with a pair of magnetic coils or a bar magnet. This produces a stronger and different magnetic field from that of earth's magnetic field :

- (a) When a pigeon with reversed magnetic field is released under similar conditions, it flies in the opposite direction away from home.
- (b) When a pigeon with reversed magnetic field is released on a sunny day, there is no effect of magnet on its direction and it flies back home.
- (c) Pigeons released at places with distorted magnetic field remain disoriented.

**3. Odour :** Pigeons are believed to use familiar odours to find their home. Pigeon in its loft learns the odours that are brought by the wind from each direction. When it is released, it recognizes the odour and remembers the direction of wind and thus recognizes the direction of home.

4. **Route Reversal** : Pigeons are said to remember the route by which these were taken away from their home and return back following the same route.

5. **Familiar Land Marks** are identified by the pigeons to locate the route of their nest or their home.