

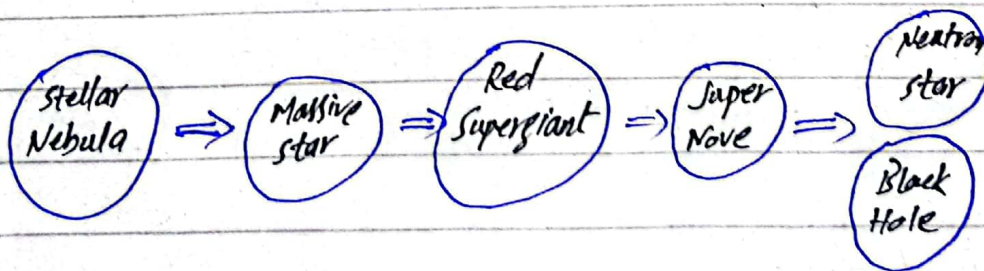
What is a 'Black Hole'? How black holes are formed and discovered?

Definition:

A black hole is a region in space where gravitational forces are so strong that nothing, not even light, can escape its gravitational pull.

Formation of Black Holes:

Black holes are formed when massive stars exhaust their nuclear fuel and collapse under their own gravity. This collapse results in a singularity, a point of infinite density, surrounded by an event horizon, the boundary beyond which nothing can escape.



Discovery of Black Holes:

Black holes are discovered indirectly by observing the effects of their gravity on nearby objects.

This includes:

- Tracking the motion of stars orbiting an invisible mass.
- Detecting X-rays emitted by matter as it gets heated up and falls into a black



hole.

- Observing gravitational waves produced by the collision of black holes.