

GSA

Assignment — 1.

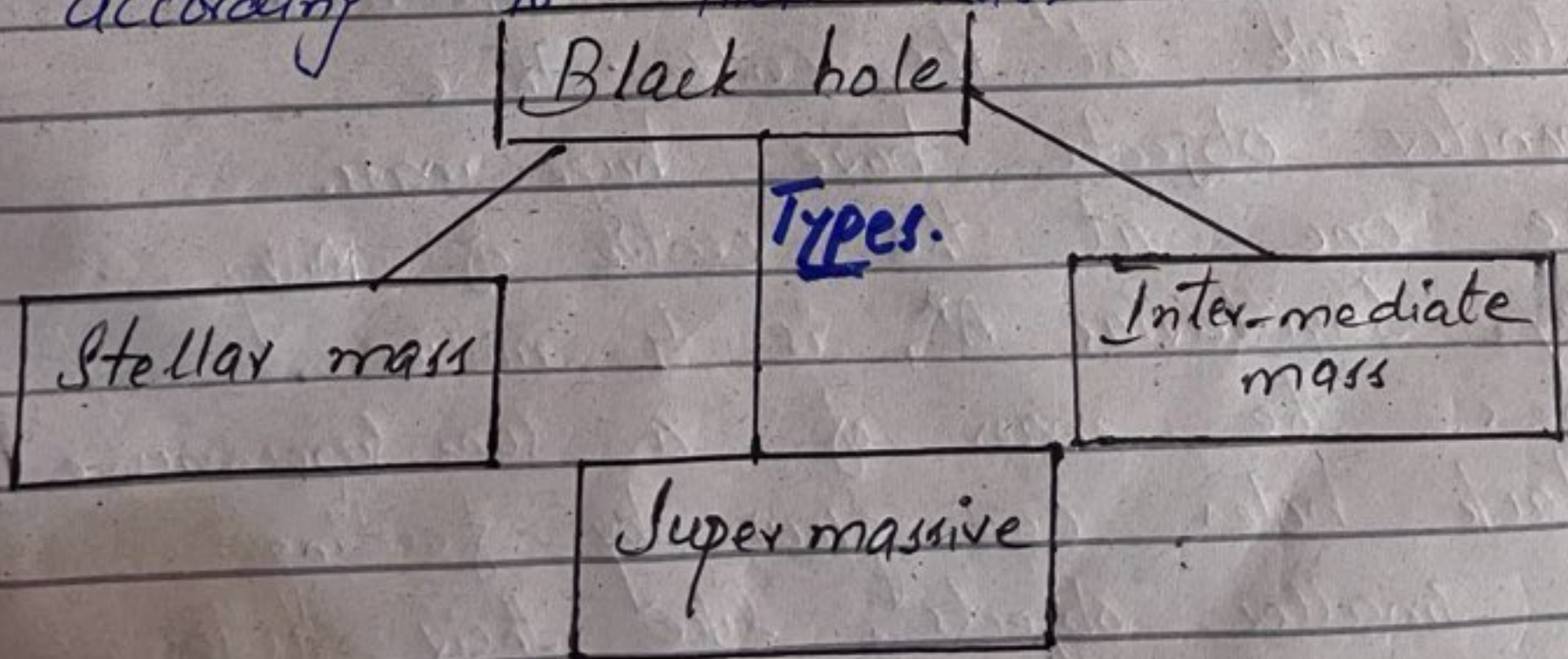
Q:- Types of black hole (5)

Ans:- **Black hole:**

is a cosmic body of extremely intense gravity from which even light cannot escape. Black holes usually cannot be observed directly, but they can be observed by the effects of their enormous gravitational fields on nearby matter. Example include: Sagittarius A*, a super massive black hole that exists at the centre of the Milky Way Galaxy.

Types of Black hole.

Astronomers generally divide black hole into three categories according to their mass



(i) Stellar mass:-

When a star with more than eight times the sun's mass runs out of fuel, its core collapses, rebounds and explodes as a supernova. The residue left behind depends on the star's mass before the explosion. If it was near the threshold, it creates a city sized, super dense neutron star. If it had around 20 times the sun's mass or more, the star's core collapses into a stellar-mass black hole. The masses of newly born objects varies and stellar-mass black hole can gain mass through collisions with stars and other black hole.

(ii) Super massive:-

Almost every galaxy, including our milky way, has a super massive black hole at its centre. These monster objects have huge mass. The one at the centre of Milky Way, Sagittarius A*, is 4 million times the mass of a sun. Super massive black holes can grow by feeding on smaller objects, like their stellar-mass relatives and neutron stars.

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(iii) Intermediate:

Scientists once thought that black holes came in only small and large sizes, but research has revealed the possibility that midsize, or inter-mediate black holes (IMBHs) could exist. Such bodies could form when stars in a cluster collide in a chain reaction



Q: Define Supernova. (2)

Ans: Supernova:

is a powerful and luminous explosion of a star. A supernova occurs during the last evolutionary stages of a massive star or when a white dwarf is triggered into runaway nuclear fusion.

