

Q. What is Biodiversity? How it is measured?

Biodiversity (in which Bio - living organisms) & diversity means (variations).

Scientifically biodiversity is the totality of variations present in the biosphere in

all types of ecosystems whether aquatic or marine or terrestrial. This definition was given as per 1992 UN Earth Summit

Categorisation

Species diversity

→ variation in species.
eg) Bat, eagle, etc.

Genetic diversity

(variation in genes)
eg) Butterflies, Roses etc.

Ecosystem

(variation in the ecosystems)
eg) desert, grasslands, forests etc.

#

Measurement of Biodiversity :-

Species Div.

①
Species Richness

②
Species Evenness

- Alpha diversity
- Beta diversity
- Gamma diversity

① Species Richness - varieties of species in an area

Alpha diversity

Beta diversity

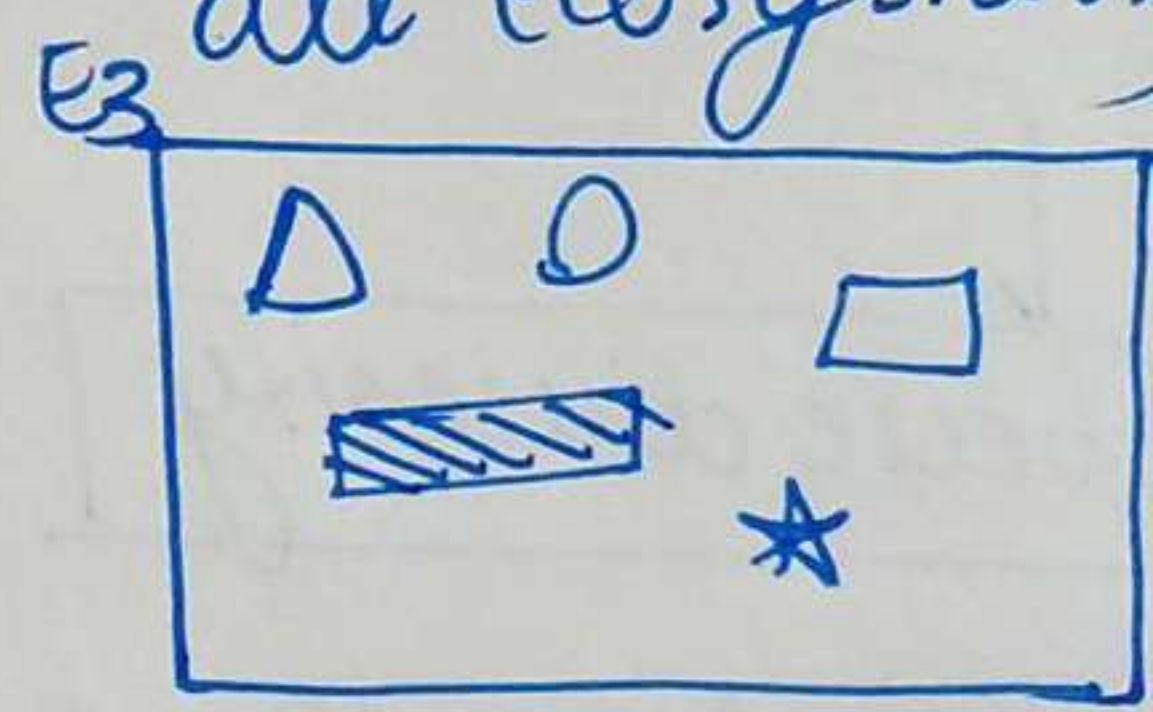
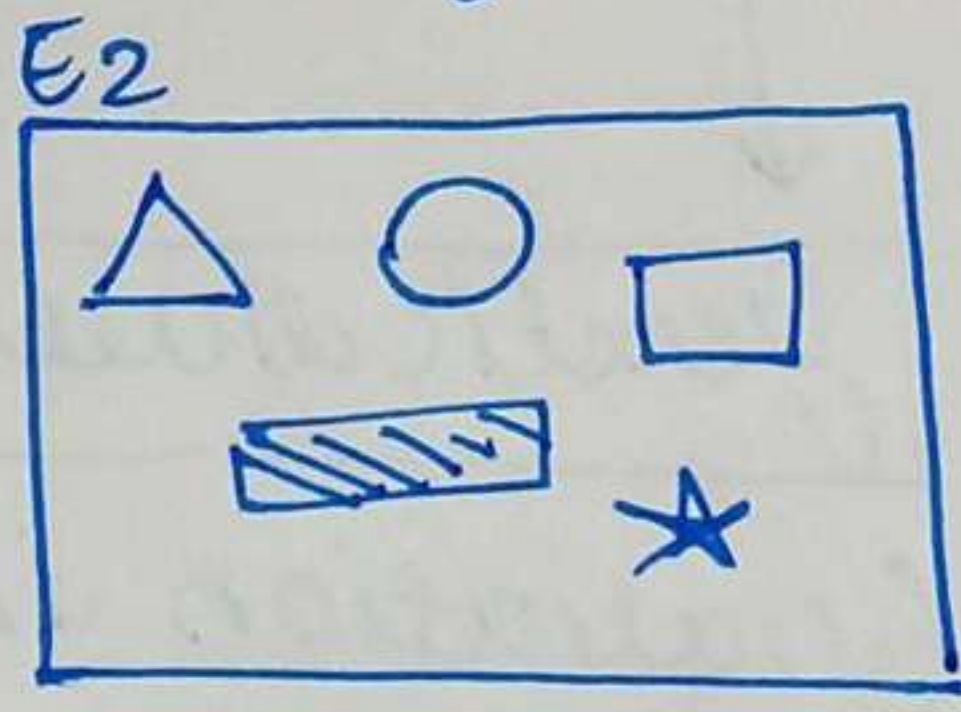
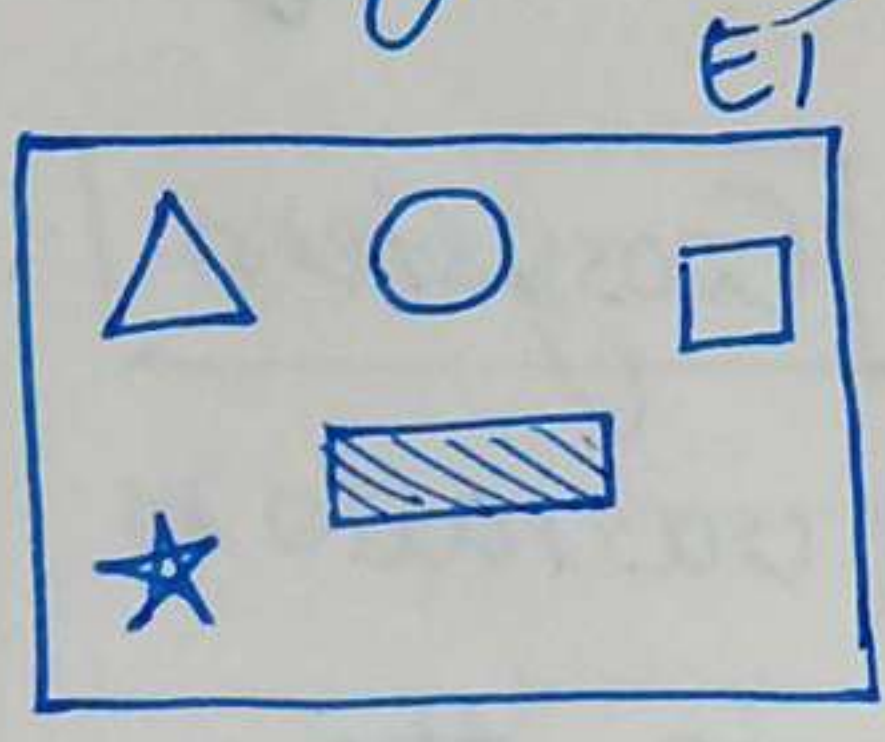
Gamma

(diversity within an ecosystem)

(diversity b/w ecosystems)

(total diversity in all ecosystem)

eg)



$\alpha = 5$ (as five no. of species are present)

$\beta = 1$ (b/w E1 & E2)

$\gamma = 5$ (total no. of species)

$$= \alpha \times \beta = \gamma$$

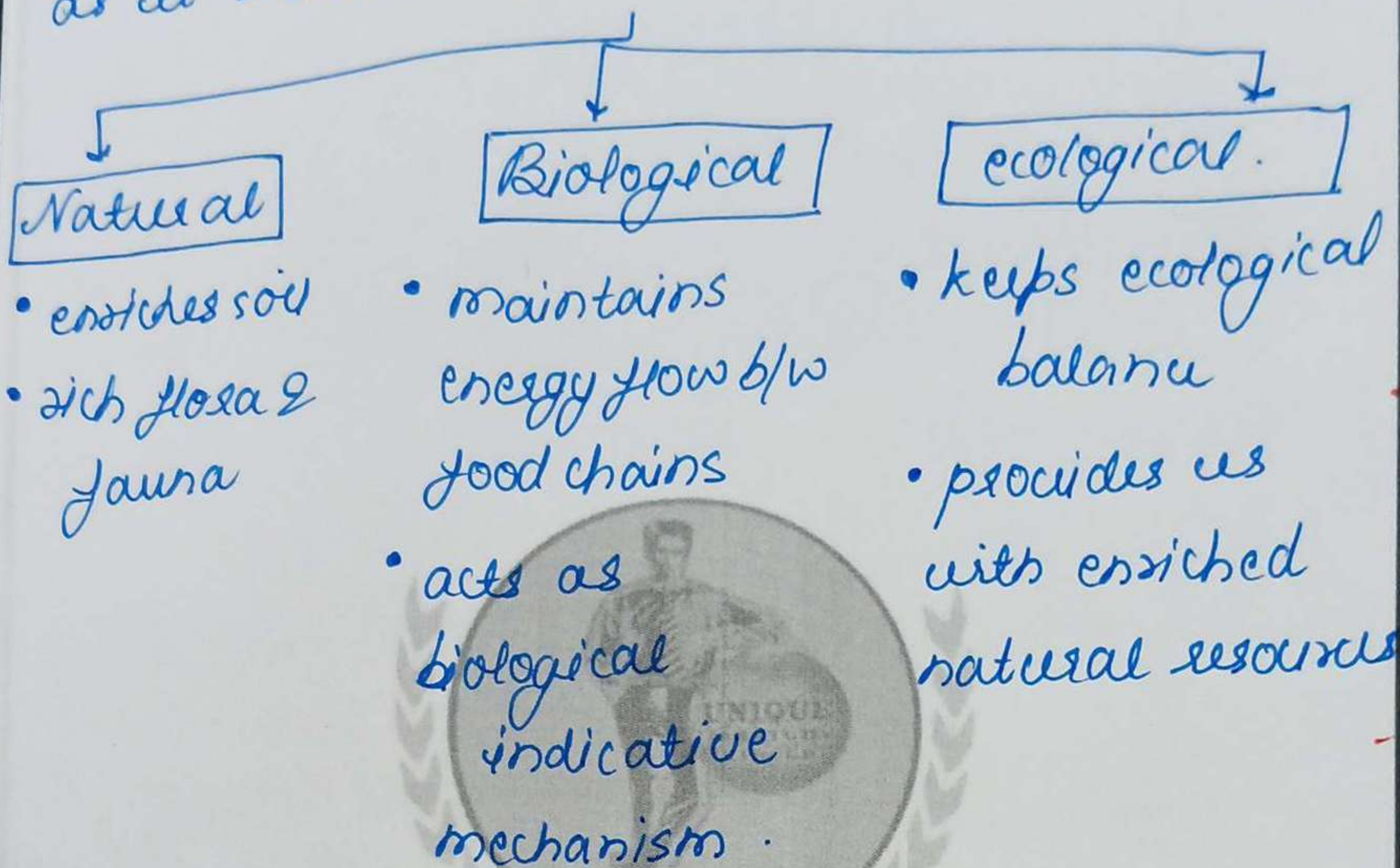
$$= 5 \times 1 = 5$$

②

Species Evenness

check of proportion of species in an area.

Biodiversity on the planet is very essential as it renders certain services like



∴ Biodiversity is ~~the~~ overall very necessary for ~~every~~ survival of every form of life since every living organism on the earth is interdependent on one other for their survival & destruction or damage to biodiversity ~~is~~ can prove to be very harmful for entire lifeforms. So it must be preserved & protected.

Excell!