



# Top 60 Questions on Ecology Part- 1

Special class

# 60 Question series

## Ecology part-1



**HIMANSHI JOSHI**

# HIMANSHI JOSHI

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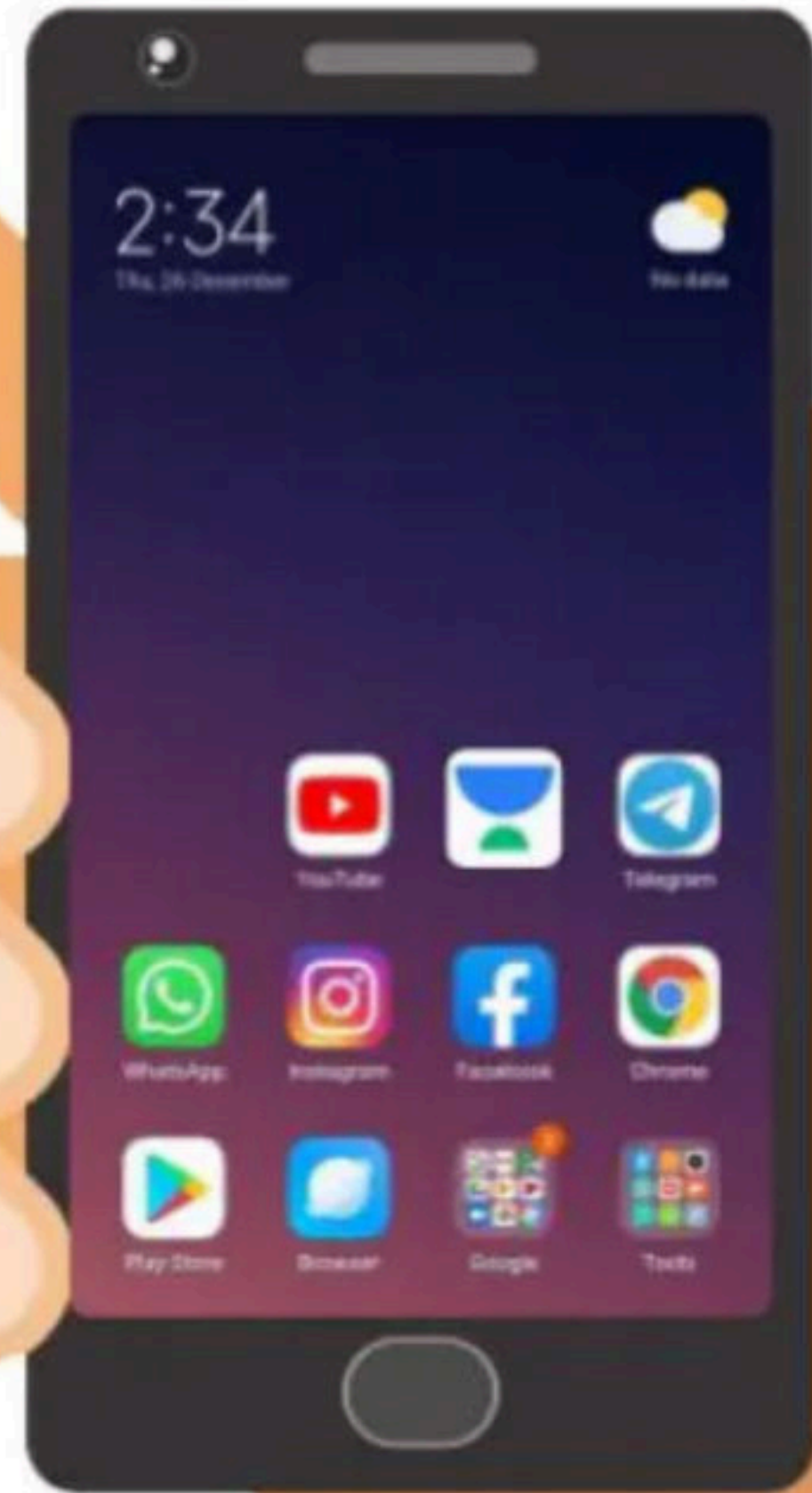


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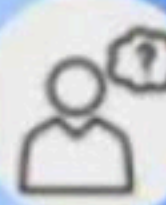
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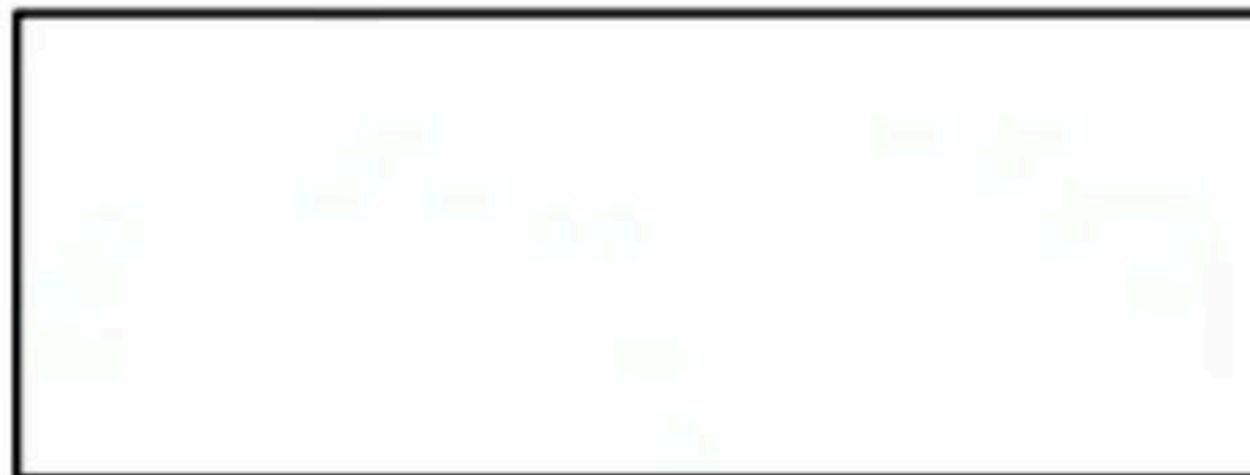
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# 60 Important questions

1. Basic unit of ecological hierarchy is

(a) population

(b) community

(c) ecosystem

~~(d) individual.~~

→ organism.

# 60 Important questions

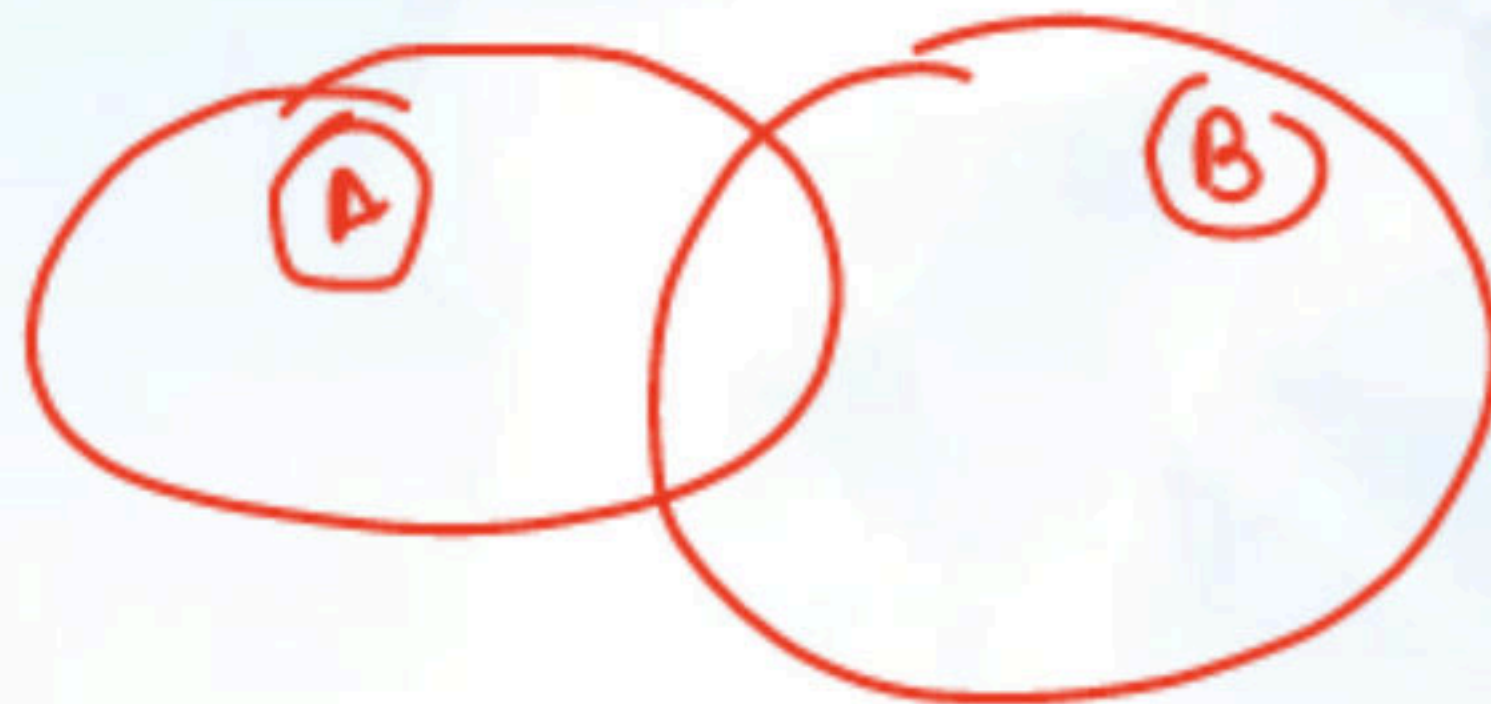
2. Niche overlap indicates

(a) mutualism between two species

(b) active cooperation between two species

(c) two different parasites on the same host

~~(d)~~ sharing of one or more resources between the two species



# 60 Important questions

3. Different biomes are formed due to annual variations in \_\_\_\_\_ over the earth's Surface.

- (a) temperature ✓
- (b) precipitation ✓
- (c) incident solar radiation ✓
- ~~(d) all of these~~

# 60 Important questions

4. Which of the following is not a part of an organism's physical environment?

- (a) Temperature
- (b) Light
- ~~(c) Other organisms~~
- (d) Humidity

Physical env. → abiotic  
↓  
living org. → Biotic

## 60 Important questions



5. Organisms that can tolerate a wide range of salt concentration are termed as

- (a) Stenosaline
- (b) stenohaline
- (c) euryhaline
- (d) none of these

## 60 Important questions

6. Water plays vital role in living organisms because
- (a) it makes 90% of the protoplasm ✓
  - (b) translocation of nutrients inside the body occurs ✓ with the help of water
  - (c) water loss in form of sweating ✓ helps to maintain body temperature
  - ~~(d) all of these.~~



# 60 Important questions

7. Many animals use the diurnal and seasonal variations in light intensity and photoperiod to time their

- (a) Migration ✓
- (b) reproductive activities ✓
- (c) Suspension ✓
- ~~(d) all of these.~~

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# 60 Important questions

8. Water holding capacity of the soil depends upon
- (a) chemical composition of soil ✓
  - (b) particle size of soil ✓
  - (c) aggregation of soil particles ✓
  - ~~(d) all of these.~~

## 60 Important questions

9. Which of the following statements is incorrect?

- (a) the flora of a place is determined by availability of water.  
*→ plants*
- (b) the availability of light on land is closely linked with that of temperature since sun is the source for both.
- ~~(c) Topography does not affect biodiversity.~~
- (d) Soil composition also affects the seepage of water : into ground.



# 60 Important questions



10. Organisms that can maintain a constant internal temperature are called \_\_\_\_\_

- (a) homoeothermic
- (b) poikilothermic
- (c) oligothermic
- (d) heterothermic

## 60 Important questions

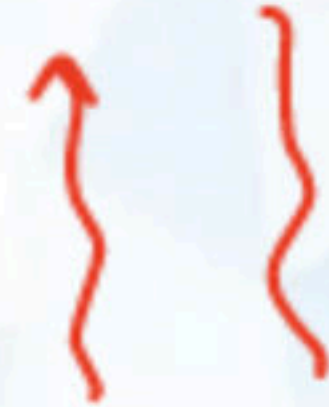
11. Which of the following statements is incorrect?

- (a) ~~Osmoconformers~~ are able to maintain osmotic concentration of their cells by either physiological or behavioural means.
- (b) Most vertebrates, except the birds and mammals are unable to thermoregulate.
- (c) Success of mammals is mainly due to their ability to: thermoregulate and live comfortably whether they are in Antarctica or in Sahara desert.
- (d) None of these

# 60 Important questions

12. Which of the following is an important adaptation of animals to the cold climate?

- (a) Thin layer of body fat +
- (b) Aestivation *summer sleep*
- (c) Increased tendency to shiver
- (d) Reduced surface area to volume ratio.



## 60 Important questions



13. \_\_\_\_\_ is an attribute of the organism (morphological, physiological, behavioural) to survive and reproduce in its habitat.

- (a) Migration
- (b) Hibernation
- (c) Adaptation
- ~~(d)~~ Homeostasis

## 60 Important questions



14. Kangaroo and desert rat that live in conditions of water scarcity are capable of meeting all their water requirements by

- (a) having a thick coat to minimize evaporative desiccation
- (b) oxidising stored fat to produce water as by product.
- ~~(c)~~ producing very concentrated urine and solid faeces
- (d) all of these.

## 60 Important questions

15. \_\_\_\_\_ rule states that mammals from colder climates generally have shorter ears and limbs to minimize heat loss.

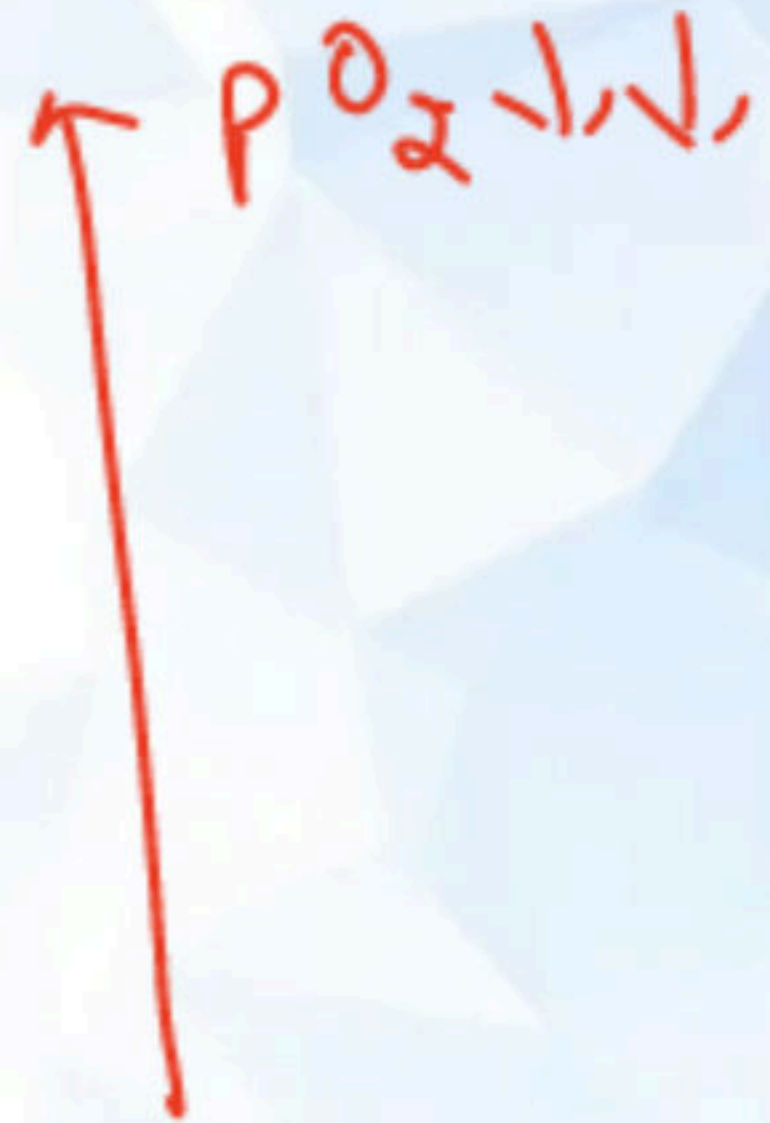
- ~~(a)~~ Allen's
- (b) Bergmann's
- (c) Jordan's
- (d) Gloger's

## 60 Important questions

16. An inhabitant of Varanasi goes to Rohtang and experiences nausea, fatigue and heart palpitations, It is because

- (a) he is experiencing altitude sickness
- (b) his RBC count is lower than required
- (c) he is in an area of low atmospheric
- (d) all of these.

$P_{O_2} \downarrow \downarrow$



## 60 Important questions



17. Which of the following problems does the frequent deep sea diver organisms like whales may face?

- (a) Compression of tissues surrounding air filled cavities
- (b) High blood nitrogen levels
- (c) Lack of oxygen
- (d) All of these

## 60 Important questions



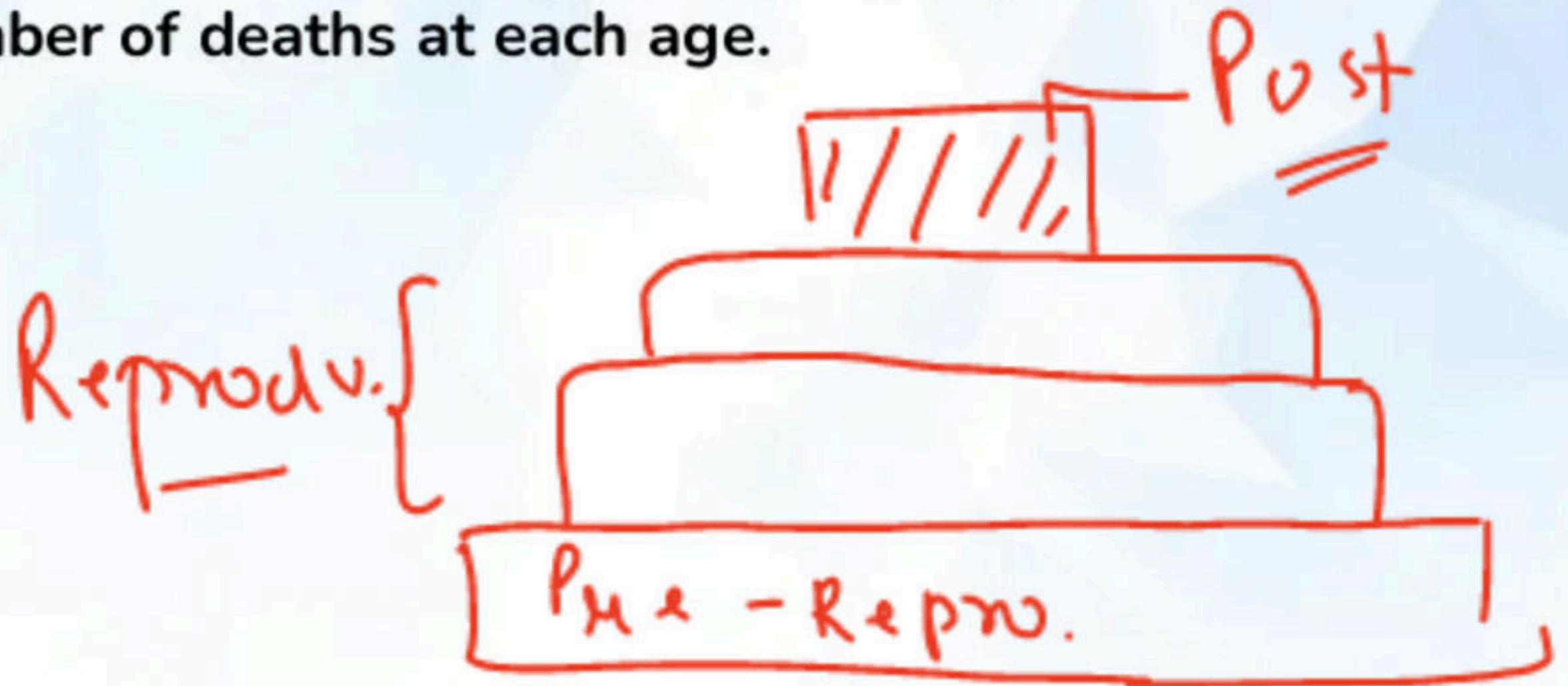
18. Which of the following options exemplifies a behavioural means of homeostasis?

- (a) A man sweating profusely in a hot room
- (b) A rhino covering itself in mud to keep cool
- (c) A desert lizard basking in sun to increase its body temperature.
- ~~(d)~~ Bath (b) and (c)

# 60 Important questions

19. The age structure of a population represents

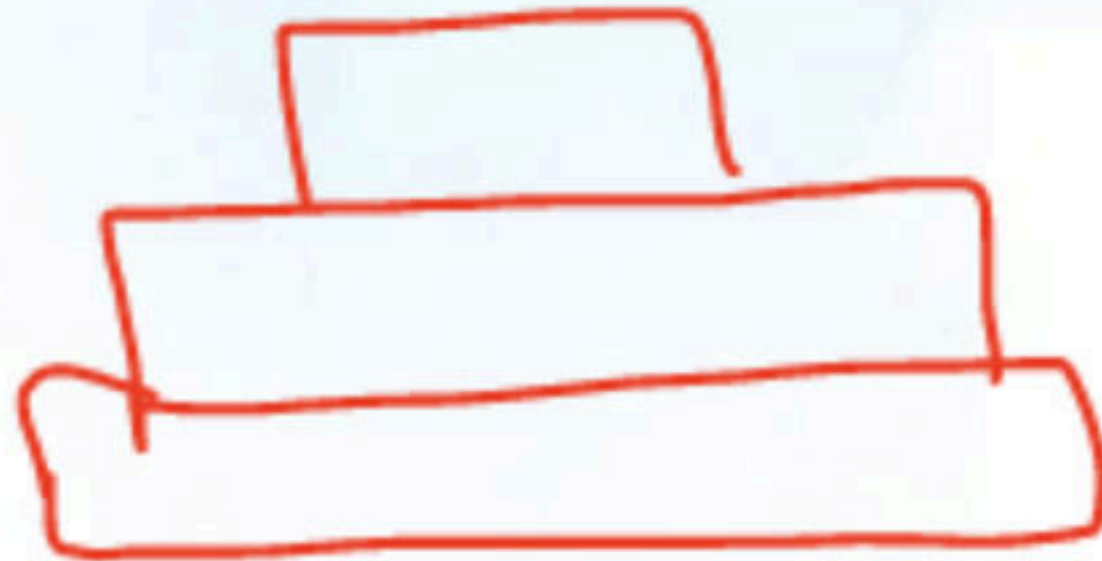
- ~~(a)~~ Relative number of individuals at each age
- (b) Number of new borns each year
- (c) Number Of Individuals reaching puberty each year
- (d) relative number of deaths at each age.



# 60 Important questions

20. A population with a larger proportion of older individuals than younger ones will likely to

- (a) grow larger and then decline
- (b) continue to grow larger indefinitely
- (c) decline
- (d) none of these.



## 60 Important questions

21. Which of the following factors has a negative effect on the population growth rate?

- (a) Emigration
- (b) Immigration
- (c) Natality *logi*
- (d) Fecundity

$$\begin{array}{l} \text{Immigr.} + \text{Birth} \} + \\ \text{Emigrat.} + \text{Death} \} - \end{array}$$

## 60 Important questions

22. Which of the following statements is incorrect?

(a) A population has certain attributes which an individual does not have.

(b) Tiger census in our National parks and tiger reserves is often based on pug marks.

~~(c)~~ If a new habitat is being colonised, birth rate may contribute more significantly than immigration to population growth.

(d) Both (a) and (c)

# 60 Important questions

23. Which of the following elements is correct?

- (a) Geometric growth produces J – shaped population growth curve.
- (b) logistic growth occurs when resources are limiting.
- (c) Equation for exponential growth is  $N_t = N_0 e^{rt}$ .
- (d) All of these



## 60 Important questions

24. The population growth is generally described by the following equation :

$$\frac{dN}{dt} = rN \left( \frac{K - N}{K} \right)$$

$$r = \frac{b - d}{N}$$

What does 'r' represent in the given equation?

- (a) Population density at time 't'
- (b) Intrinsic rate of natural increase
- (c) Carrying capacity
- (d) The base of natural logarithm

# 60 Important questions

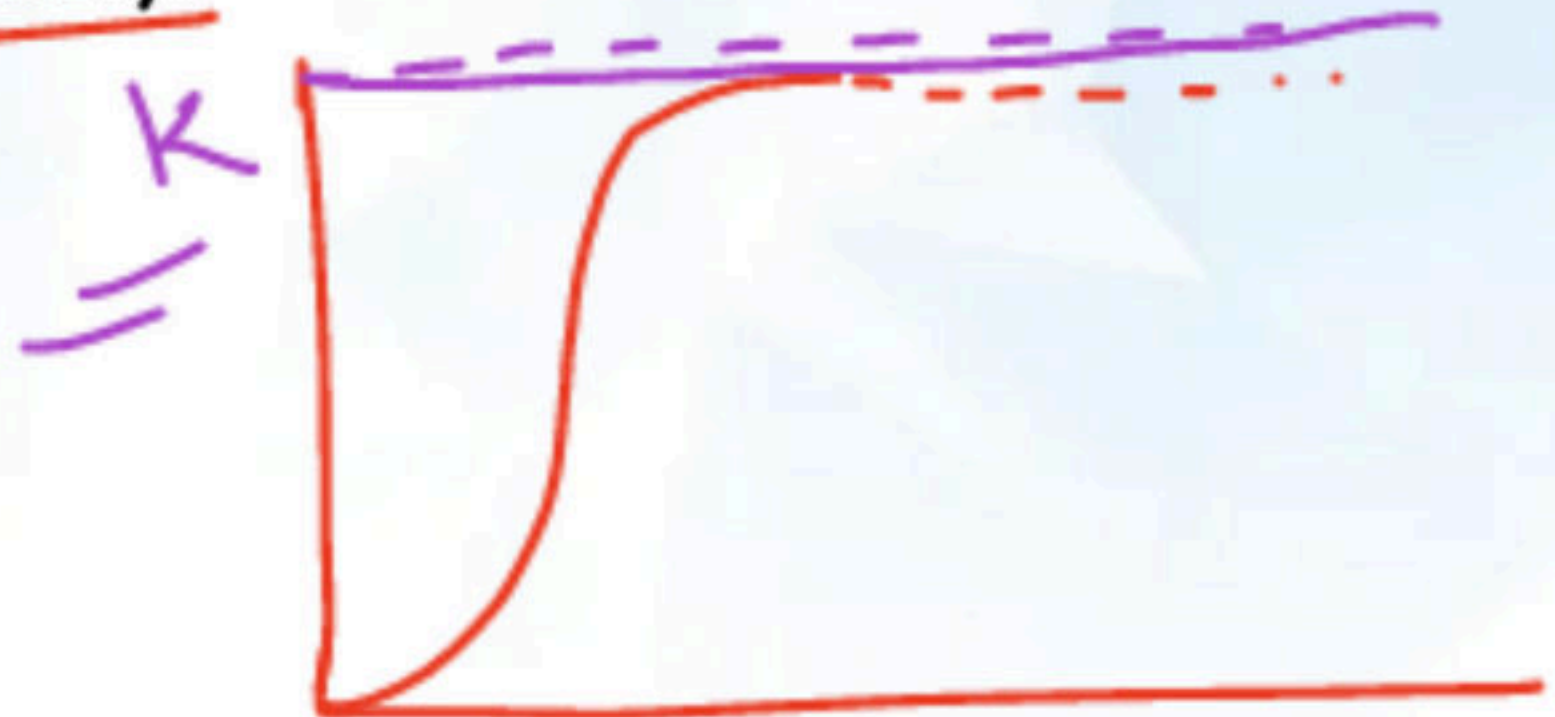
25. Which of the following statements is to correct?

(a) The number of organisms always decrease but never increase once a population reaches its carrying capacity.

(b) All populations experience exponential growth once they reach carrying capacity.

(c) A population always grows rapidly once it reaches its carrying capacity.

~~(d)~~ Limiting factors can influence the number of organisms in a population once it reaches its carrying capacity.



## 60 Important questions

26. The prickly pear cactus became unusually abundant after its introduction in Australia, because it

- ~~(a)~~ had no coevolved herbivores
- (c) lost its thorns ~~X~~
- (b) formed new mycorrhizal association ~~X~~
- (d) all of these.

## 60 Important questions

27. Why you never see cattles or goats browsing on weed Calotropis?

- (a) The plant produces highly poisonous tannins.
- (b) The plant produces quinine which is bitter in taste.
- ~~(c)~~ The plant produces poisonous cardiac glycosides.
- (d) The plant bears prickles.

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NICERT BIOLOGY

## 60 Important questions

28. Competitive exclusion principle stating that inferior species is eliminated eventually after prolonged competition, was given by

- (a) Allen
- (b) Pearl-Verhulst
- ~~(c) Gause~~
- (d) Darwin

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Phoenix

## 60 Important questions



29. Two species competing for the same resource can avoid competition by choosing different habits. This phenomenon is called resource partitioning and was supported by MacArthur.

- (a) competitive exclusion, Gause
- (b) competitive exclusion, MacArthur
- (c) resource partitioning, Gause
- (d) resource partitioning, MacArthur

## 60 Important questions

30. Which of the following statements is correct?

(a) Two species can not live in the same habitat. ~~✓~~ ✗

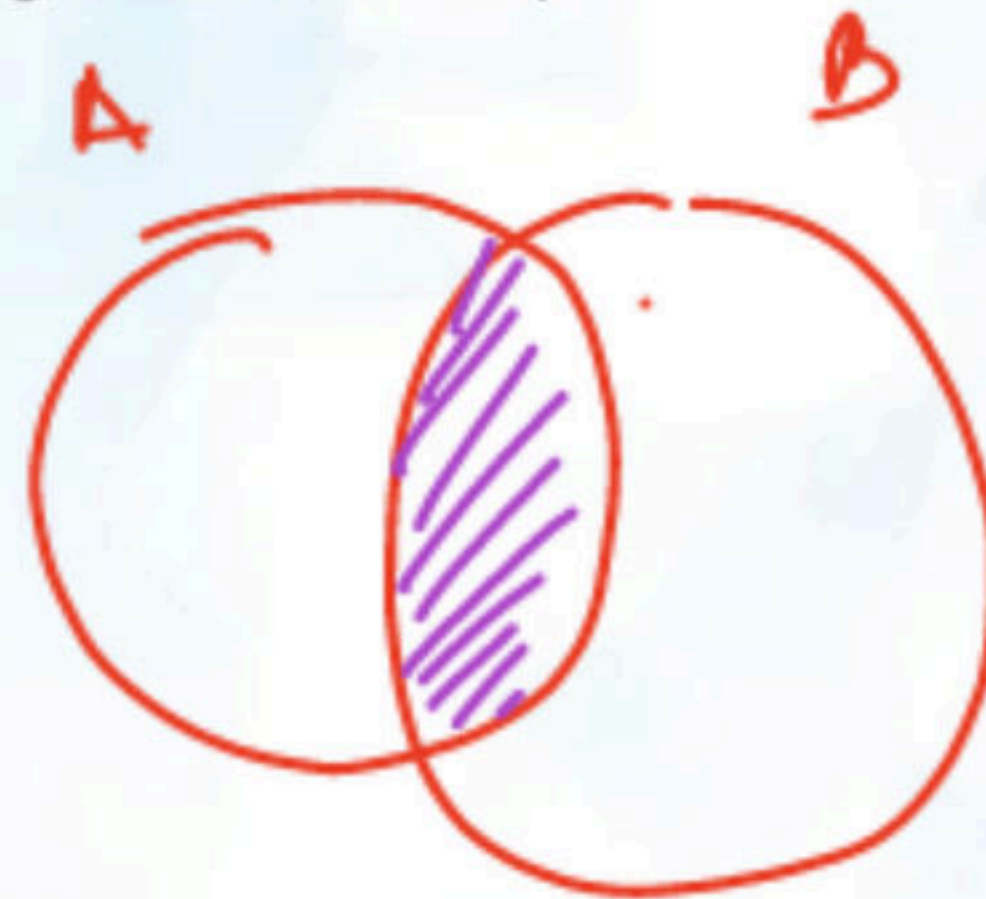
(b) The more dissimilar the niches of two species, the stronger is competition between them, ✓

~~(c) No two species can occupy exactly the same niche in the same geographical area.~~

(d) All of these

31. Ecotone is

- (a) a polluted area
- (b) the bottom of a lake
- (c) a zone of transition between two communities
- (d) a zone of developing community.



## 60 Important questions



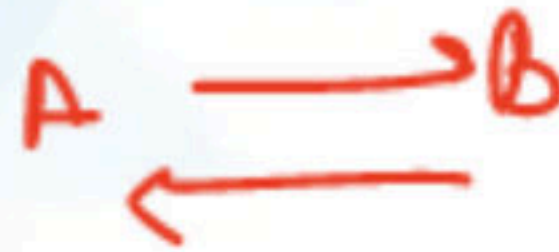
32. Amensalism is an association between two species where

- (a) one species is harmed and other is benefitted
- (b) one species is harmed and other is unaffected
- (c) one species is benefitted and other is unaffected
- (d) both the species are harmed.

33. Lichens are the associations of

- (a) bacteria and fungus
- (b) algae and bacteria
- ~~(c) fungus and algae~~
- (d) fungus and virus.

→ mutualistic



## 60 Important questions

34. Which one of the following organisms reproduces sexually only once in its life time?

- ~~(a)~~ Banana plant
- (b) Mango
- (c) Tomato
- (d) Eucalyptus.

## 60 Important questions

35. Vertical distribution of different species occupying different levels in dense vegetation is called

- (a) stratification
- (b) species composition
- (c) standing crop
- (d) trophic structure



## 60 Important questions

36. Which of the following is not a functional component ecosystem?

- (a) Productivity
- (b) Decomposition
- (c) Energy flow
- ~~(d) Ecological pyramids~~

## 60 Important questions

37. Which of the following is not an abiotic component of ecosystem?

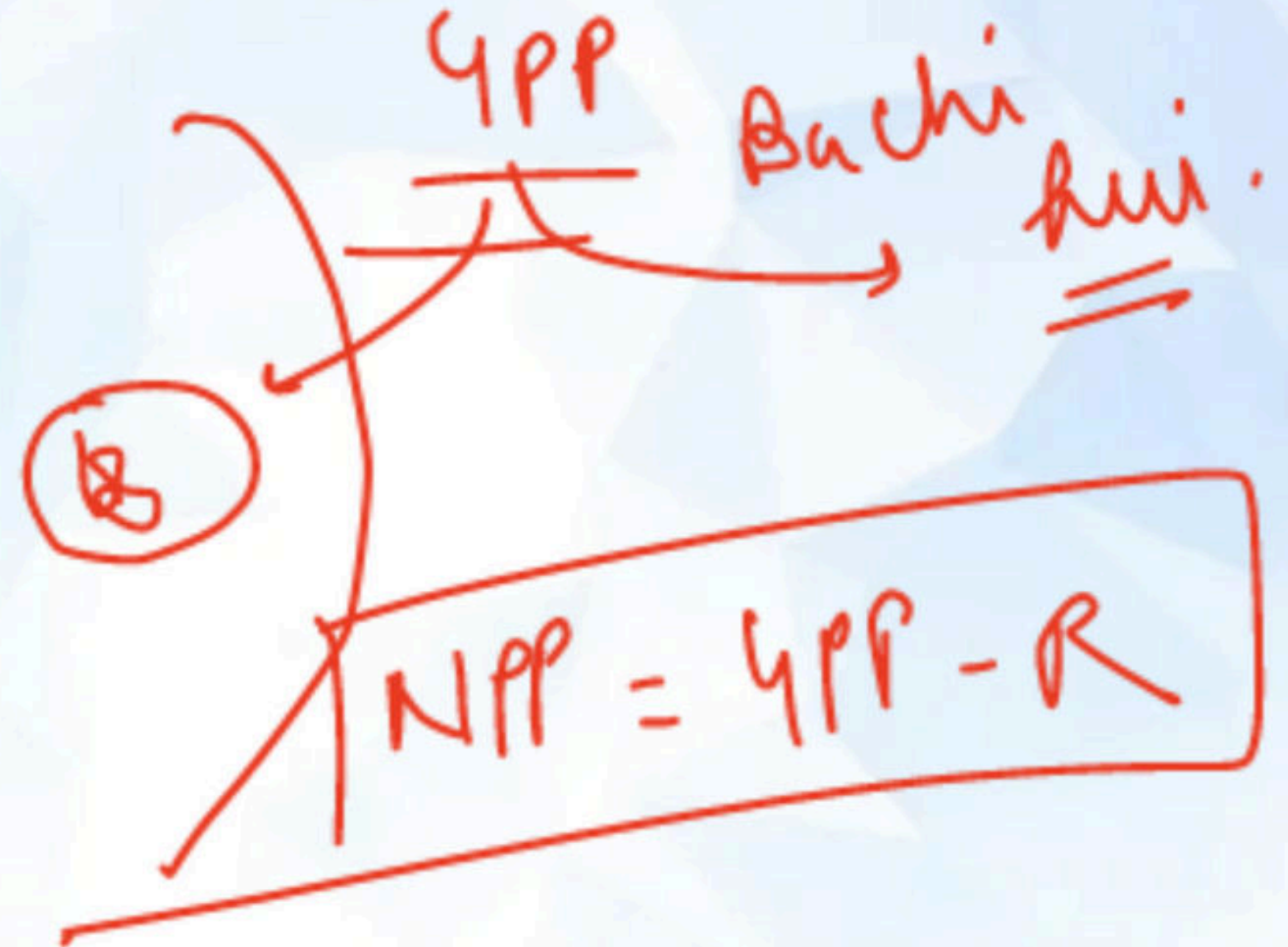
- (a) light ✓
- (b) temperature ✓
- (c) water ✓
- ~~(d) none of these.~~

non-living

## 60 Important questions

38. The rate of conversion of light energy into chemical energy of organic molecules in an ecosystem is

- (a) net primary productivity
- (b) gross primary productivity ✓
- (c) secondary productivity
- (d) gross secondary productivity ✓



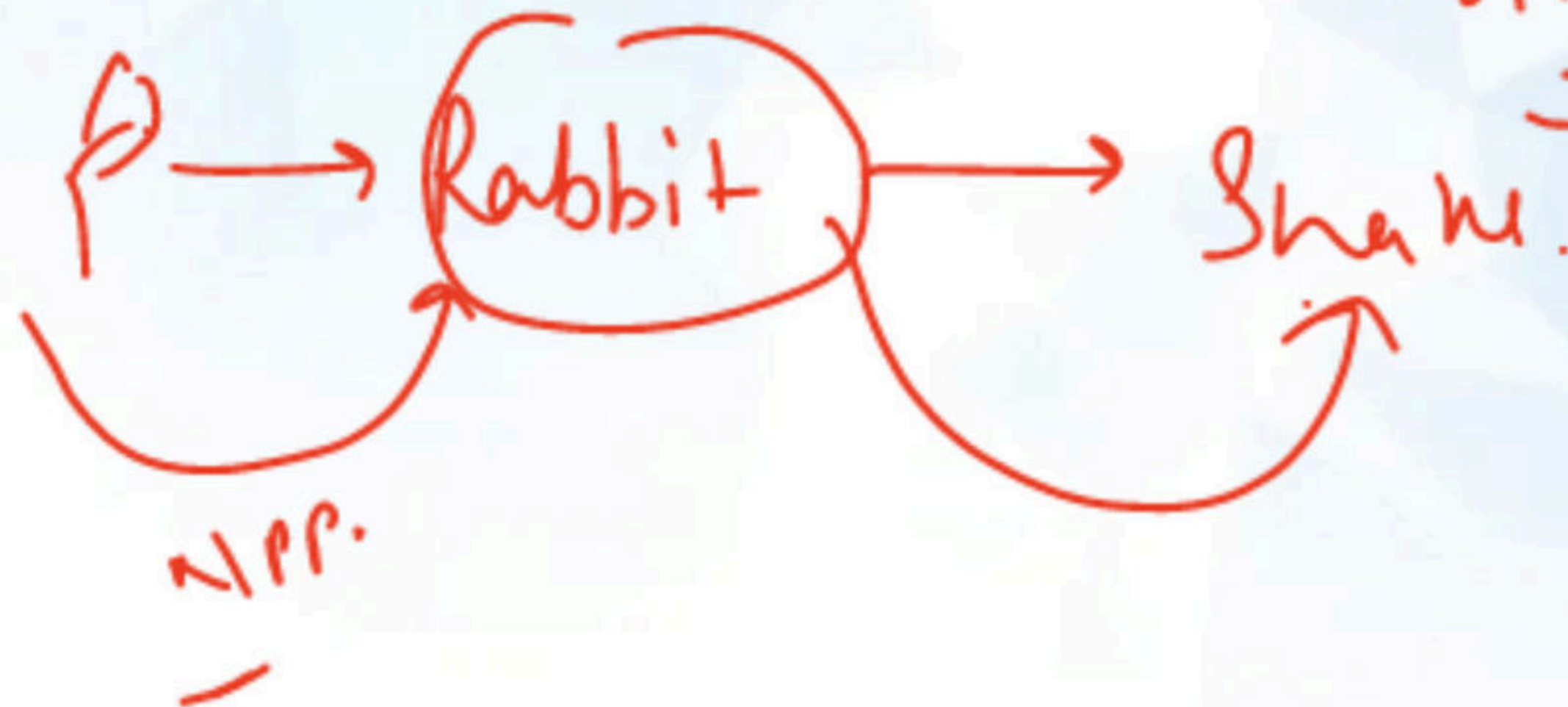
# 60 Important questions

39. \_\_\_\_\_ is the rate of production of organic matter by consumers.

- (a) Primary productivity
- ~~(b) Secondary productivity~~
- (c) Net primary productivity
- (d) Gross primary productivity

Producers

↓  
Primary



# 60 Important questions

✓  
40. Primary productivity depends upon

- (a) light and temperature ✓
- (b) Water and nutrients ✓
- (c) photosynthetic capacity of producers ✓
- ~~(d)~~ all of these. ✓

## 60 Important questions

41. During the process of decomposition
- (a)  $\text{CO}_2$  is consumed and  $\text{O}_2$  is released
  - (b)  $\text{O}_2$  is consumed and  $\text{CO}_2$  is released
  - (c)  $\text{CO}_2$  is consumed and  $\text{H}_2\text{O}$  is released
  - (d) none of these.

## 60 Important questions

42. Rate of decomposition depends upon

- (a) chemical composition of detritus ✓
- (b) temperature ✓
- (c) soil moisture and soil pH ✓
- (d) all of these ✓

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7pm!!!

# 60 Important questions

43. The ultimate energy source of all ecosystems is

- (a) producers
- (b) organic molecules
- (c) Carbohydrate
- (d) solar radiation.



# 60 Important questions

44. Select the option that correctly identifies A, B and C in the given table.

Organism	Trophic level	Food chain
Eagle	A <i>Top consumer</i>	Grazing
Earthworm	Primary consumer	<u>B</u> <i>Detritus.</i>
Frog	C	<u>Grazing</u>

- A**
- (a) Top carnivore
  - (b) Top carnivore
  - (c) Secondary consumer
  - (d) Scavenger

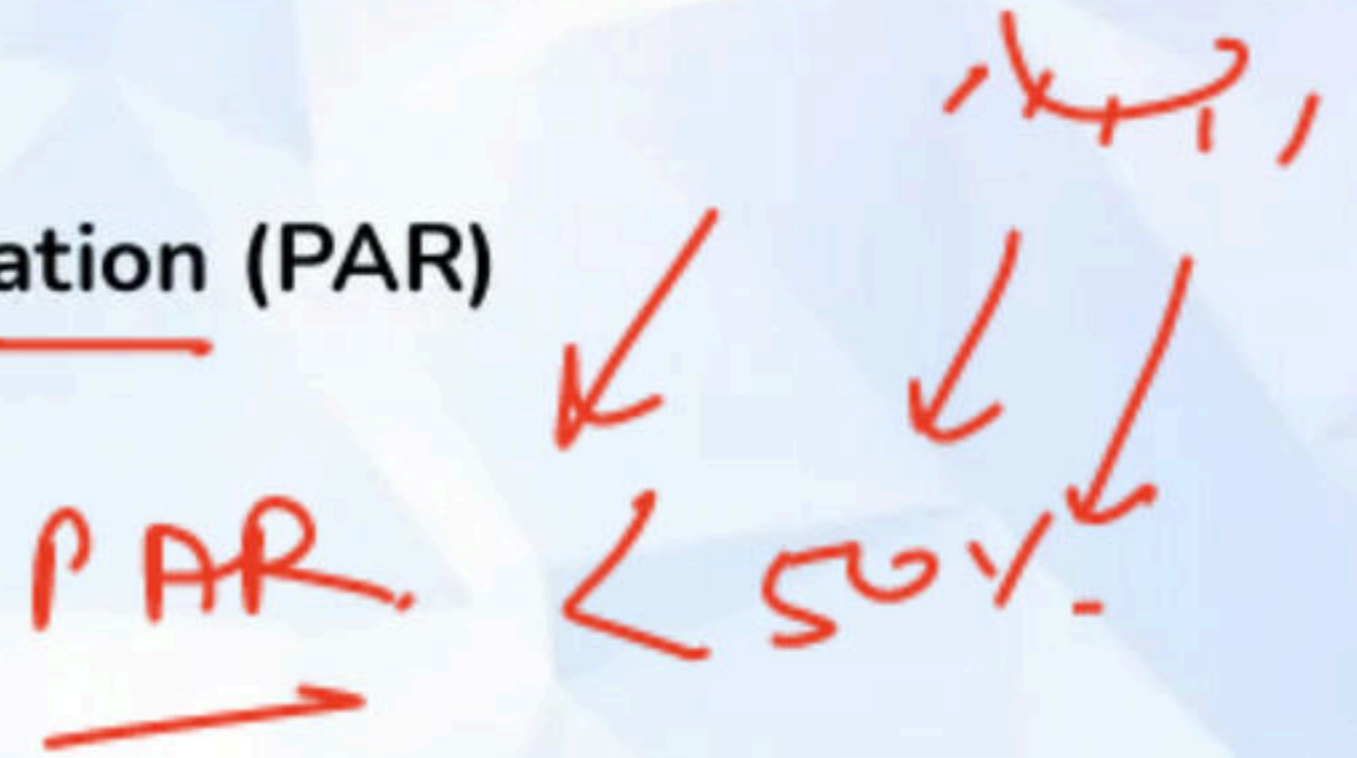
- B**
- Detritus
  - Detritus
  - Grazing
  - Grazing

- C**
- Secondary consumer
  - Primary consumer
  - Secondary consumer
  - Producer

# 60 Important questions

45. Percentage of photosynthetically active radiation (PAR) in the incident solar radiation  $I_s$

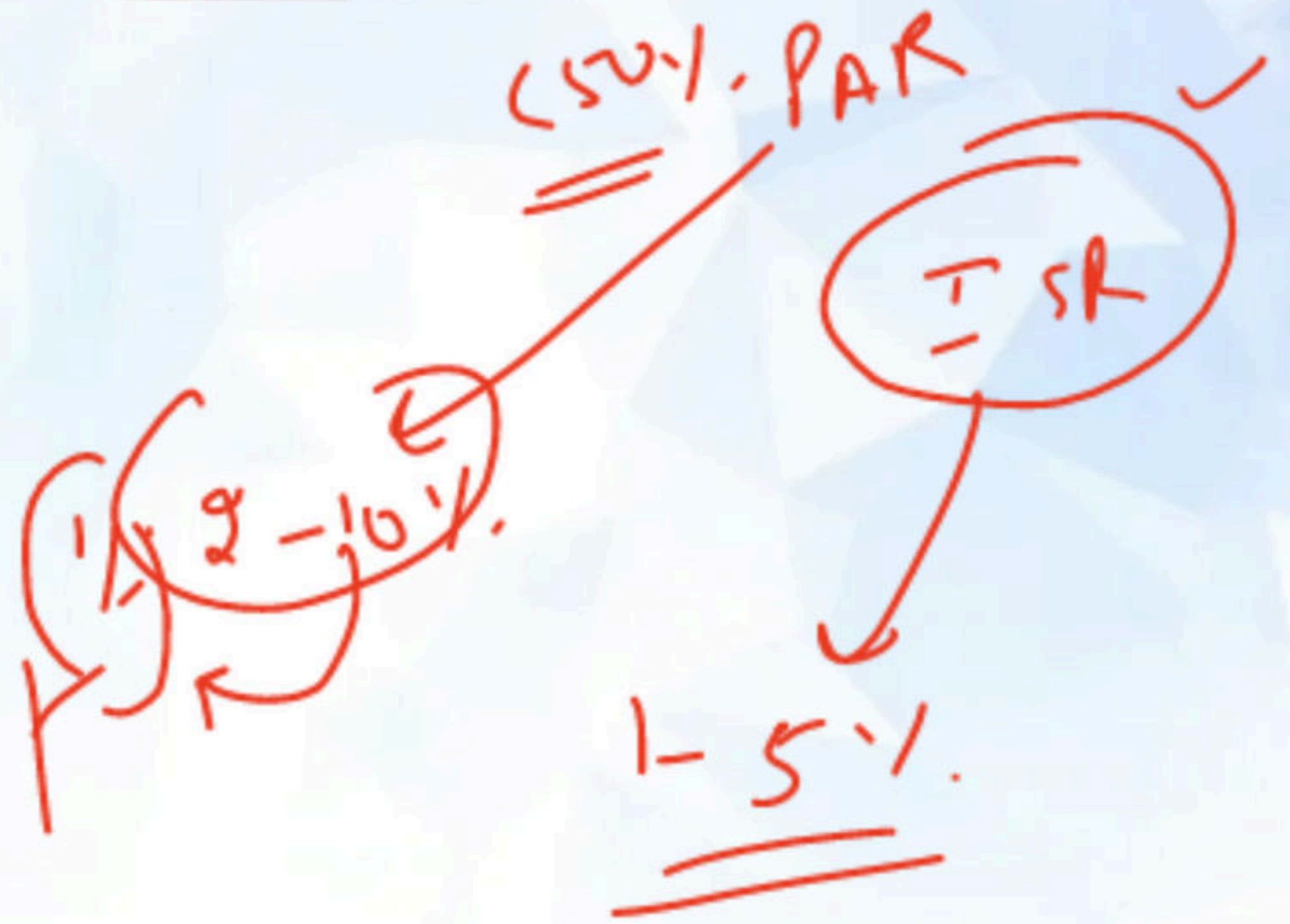
- (a) 1-5%
- (b) 2- 10%
- (c) less than 50%
- (d) approx 100%.



# 60 Important questions

46. Percentage of photosynthetically active radiation (PAR) that is captured by plants in synthesis of organic matter is           

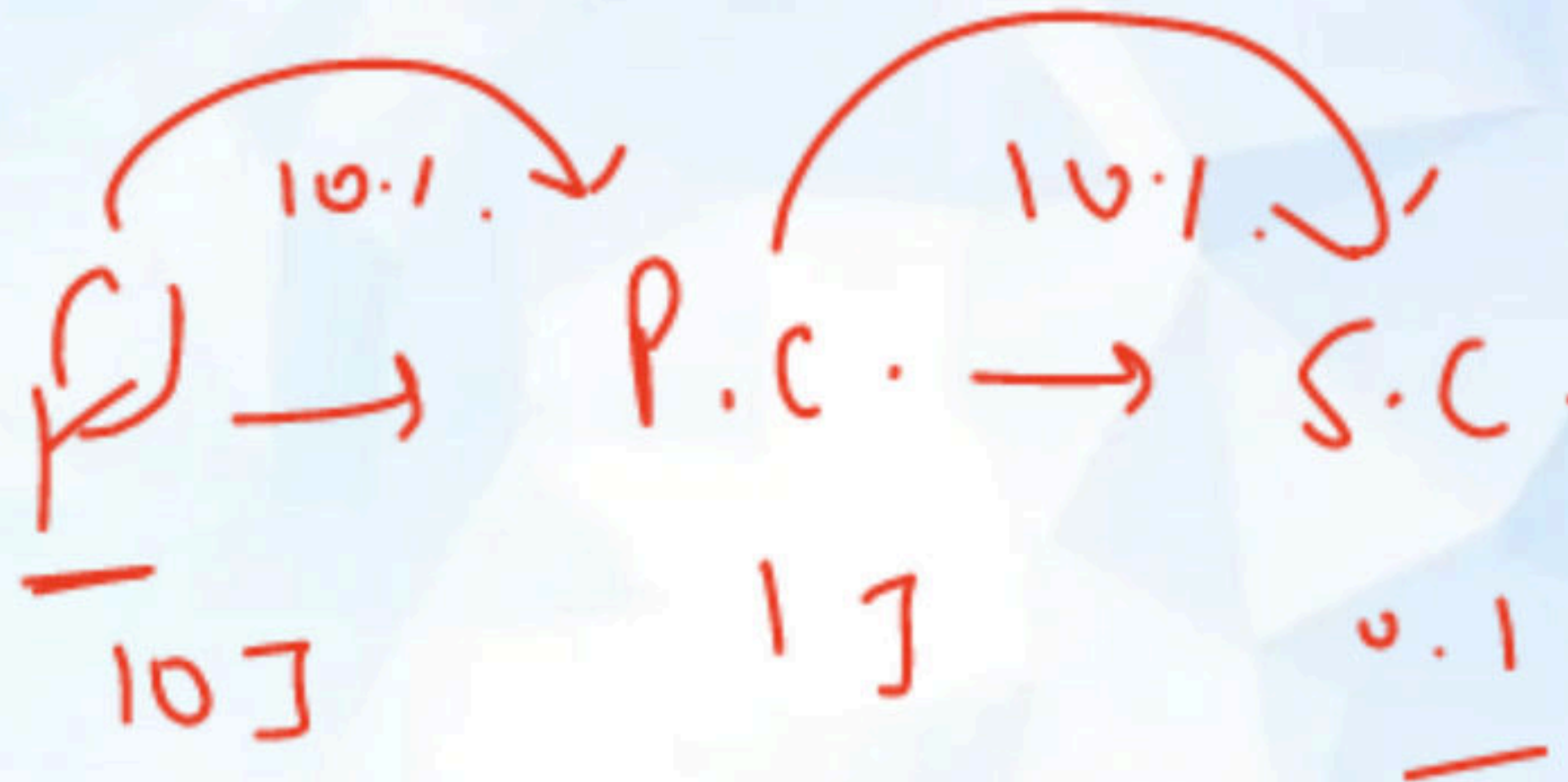
- (a) 50 – 70%
- (b) 30-40%
- (c) 80 -100%
- ~~(d) 2- 10%.~~



# 60 Important questions

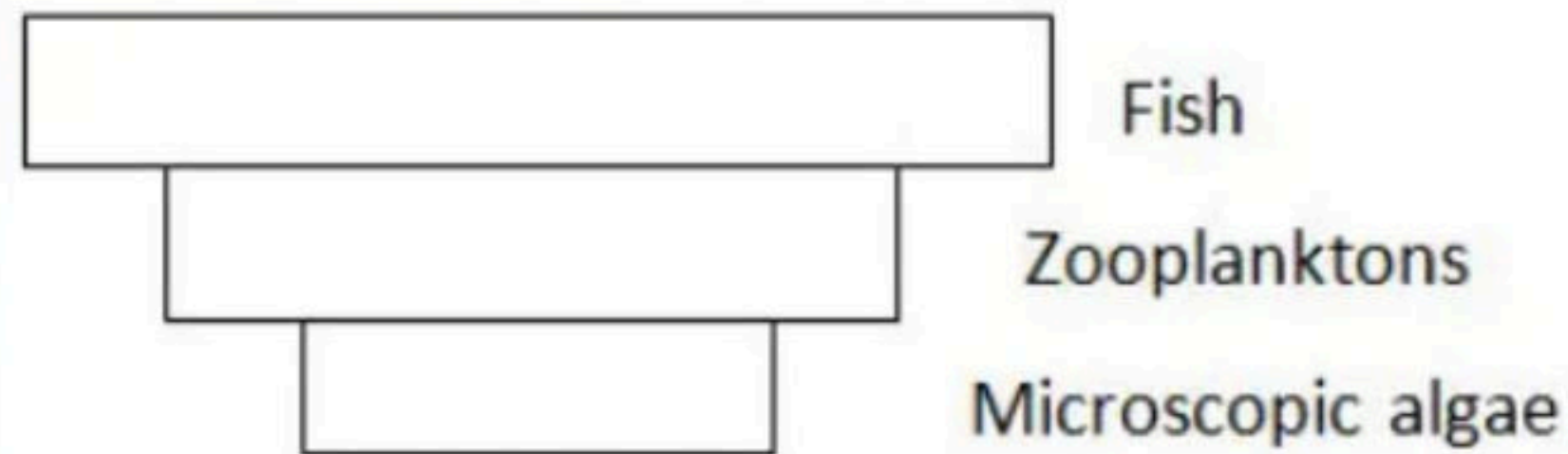
47. If 10 joules of energy is available at the producer level, then amount of energy present at the level of secondary consumers is

- (a) 10 J
- (b) 1 J
- (c) 0.1 J
- (d) 0.01 J.



## 60 Important questions

48. In an open ocean, the biomass of primary producers (microscopic algae) is often lower than the biomass of higher trophic levels (zooplanktons and fish), as illustrated below by an inverted pyramid of biomass. How can there be enough food in an open ocean to support the higher trophic levels?

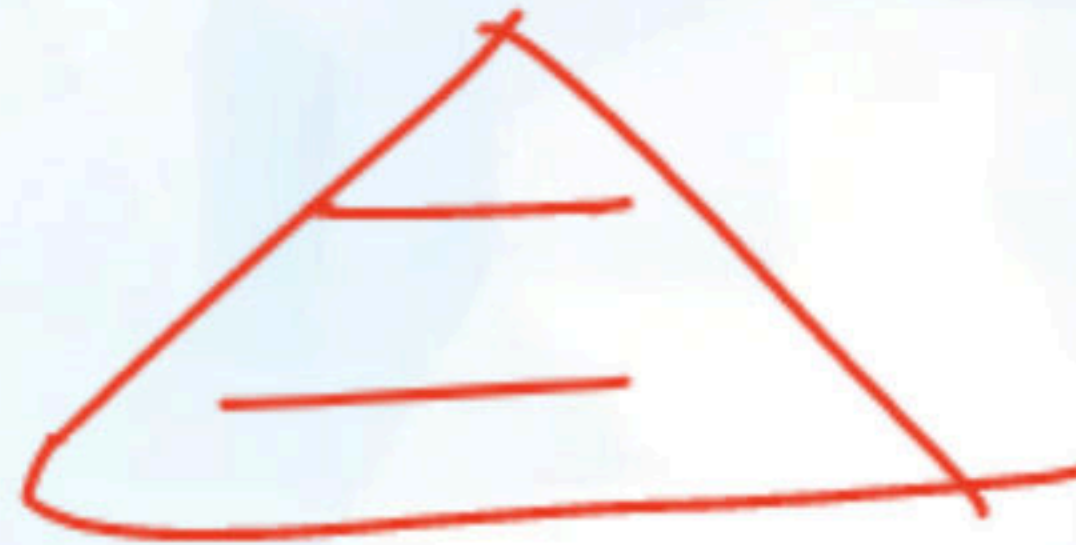


- (a) The microscopic primary producers are a source of food of high quality.
- (b) The microscopic primary producers have high rates of growth and reproduction.
- (c) The microscopic primary producers are less abundant.
- (d) The higher trophic levels are cold-blooded animals which do not require much food

# 60 Important questions

49. The energy and biomass relationship between the organisms at different trophic levels can better expressed by

- (a) food chain
- (b) food web
- (c) ecological pyramids
- (d) energy cycle.



## 60 Important questions

50. Read the following statements and select the correct ones.

(i) A given species may occupy more than one trophic level in the same ecosystem at the same time.

(ii) Productivity of an aquatic ecosystem is less than that of a terrestrial ecosystem.

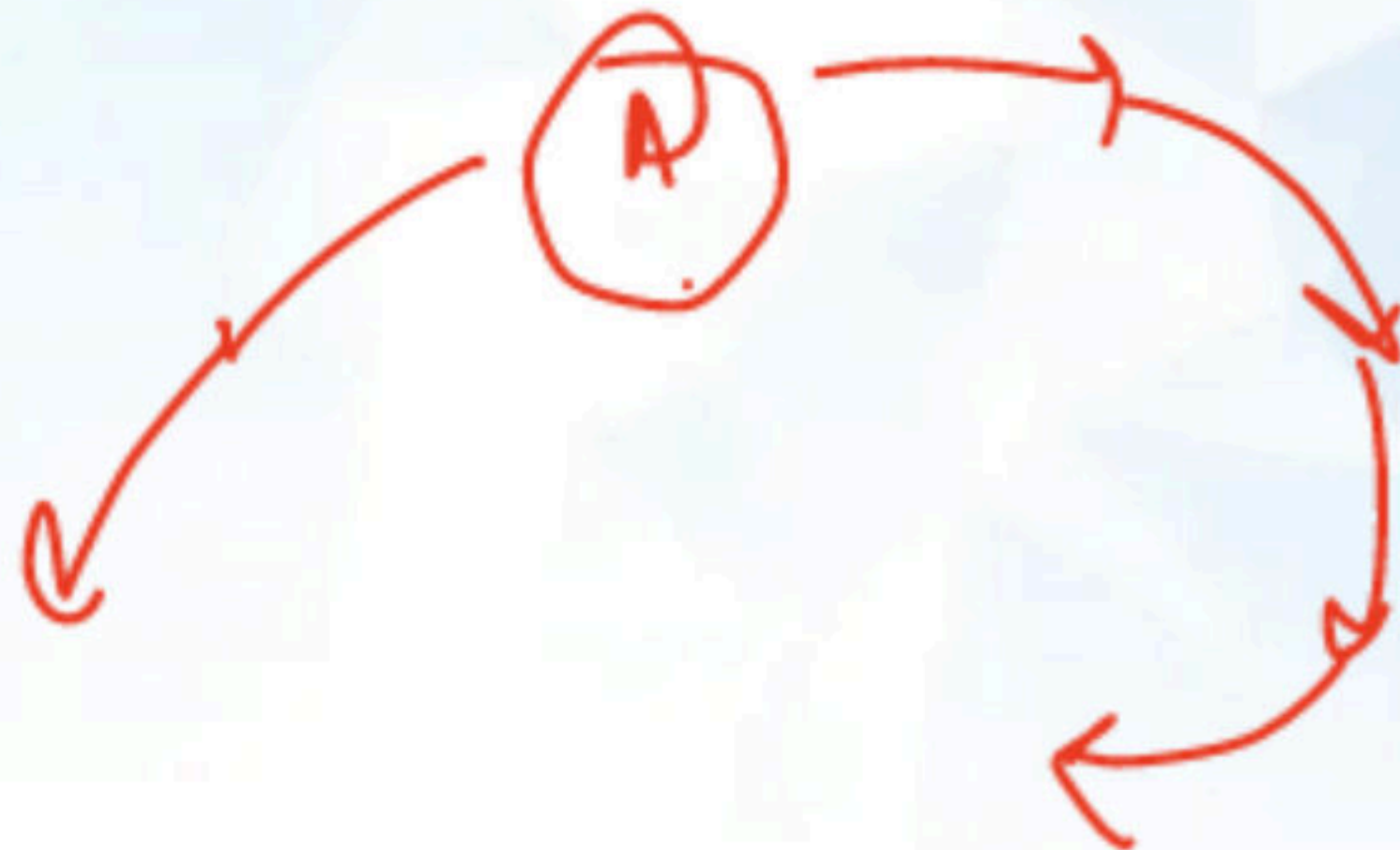
(iii) Producers constitute the first trophic level of a detritus food chain.

~~(a) (i) and (ii)~~

(b) (ii) and (iii)

(c) (i) and (iii)

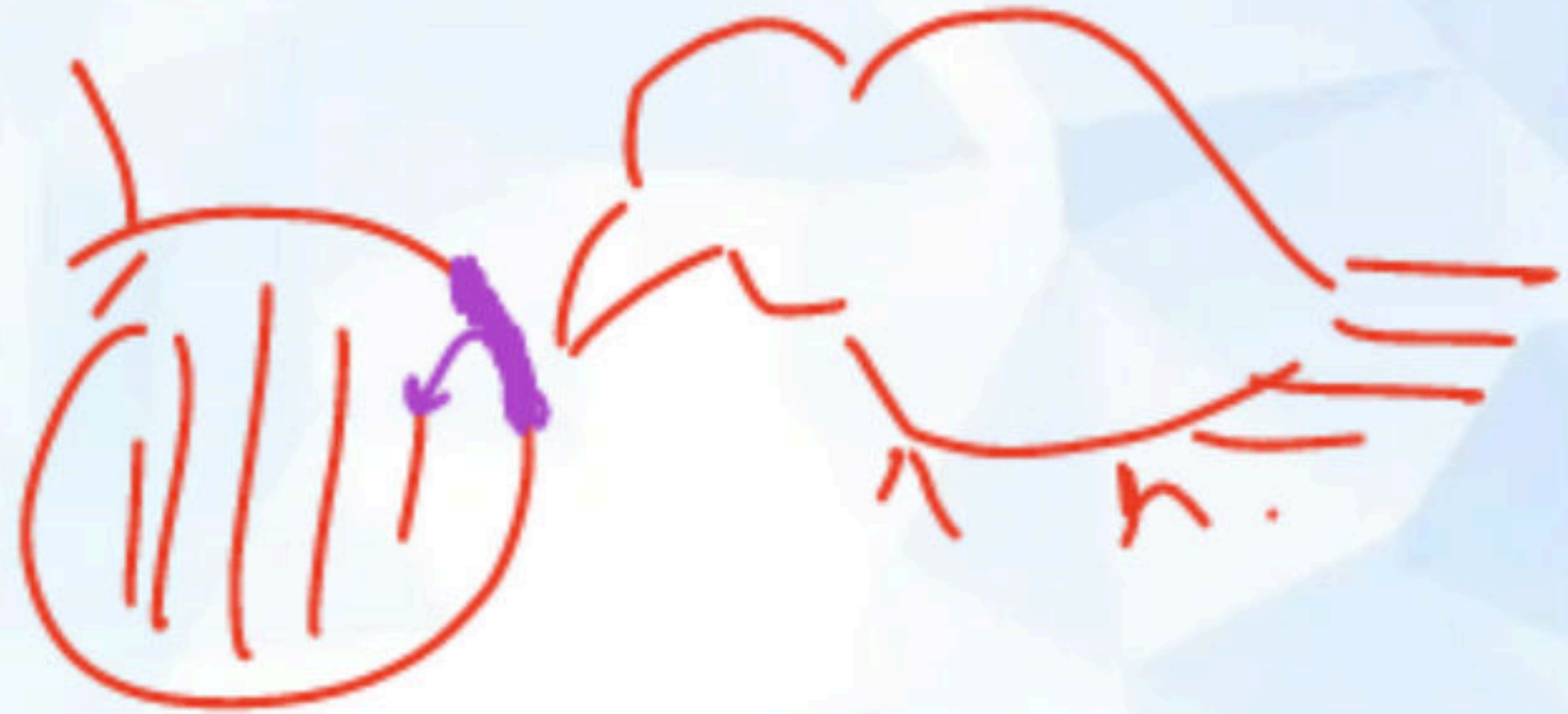
(d) (i), (ii) and (iii)



## 60 Important questions

51. Which one of the following animals may occupy more than one trophic levels in the same ecosystem at the same time?

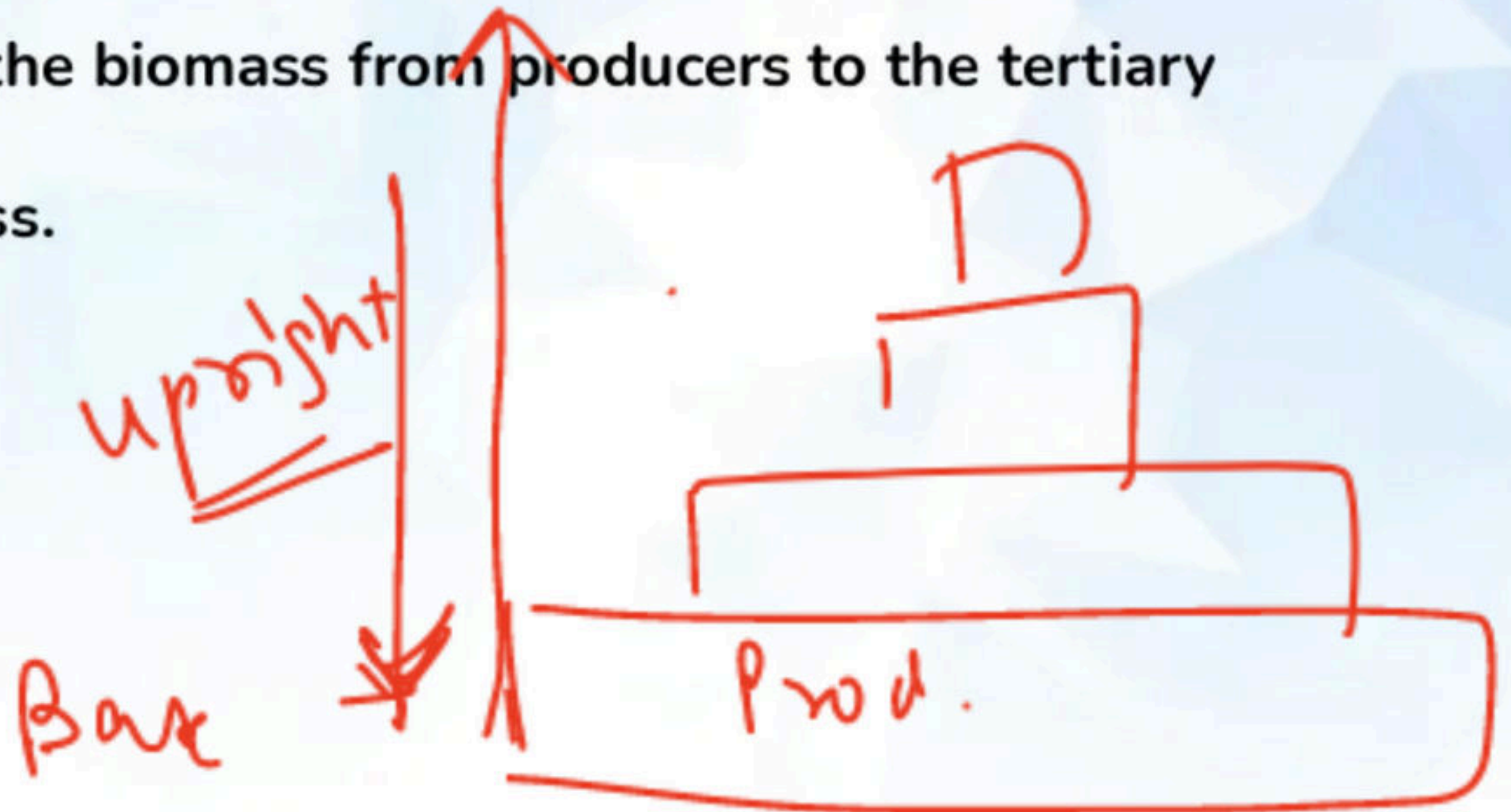
- ~~(a) Sparrow~~
- (b) Lion
- (c) Goat
- (d) Frog



# 60 Important questions

52. Pyramid of biomass for a grazing food chain represents

- (a) gradual decrease in biomass from apex to base
- (b) gradual decrease in biomass from producers to the tertiary consumers
- (c) gradual increase of the biomass from producers to the tertiary consumers
- (d) no change in biomass.



## 60 Important questions

53. The stable community during an ecological succession that would be near equilibrium with the environment is called

- ~~(a) climax community~~
- (b) pioneer community
- (c) sere
- (d) carnivores.

pioneer



Sere,  
=

climax

## 60 Important questions

54. Primary succession occurs on

- (a) area destroyed due to forest fire
- ~~(b)~~ newly formed river delta
- (c) harvested crop field X
- (d) all of these.

# 60 Important questions

55. Which of the following statements is correct for secondary succession?

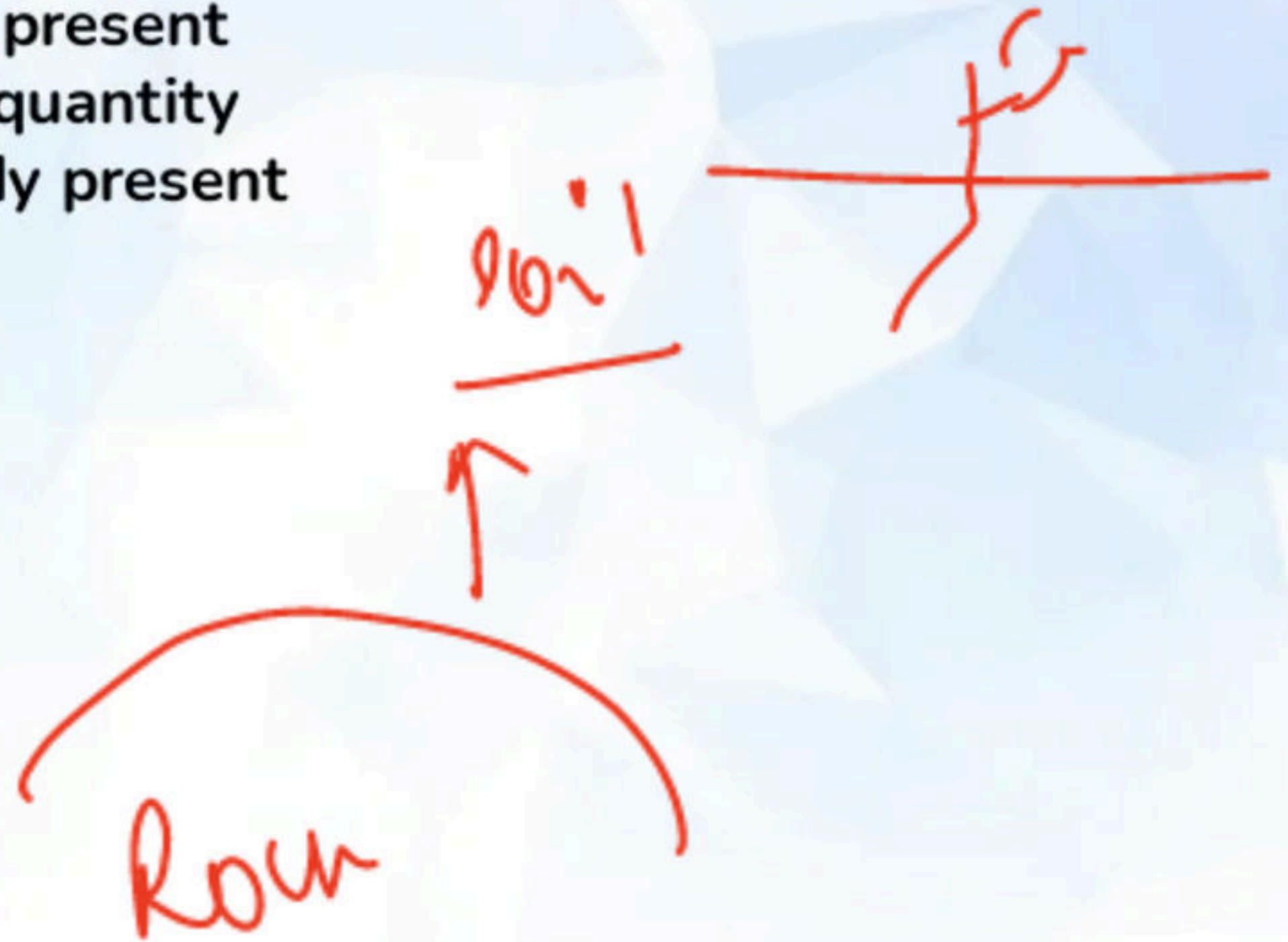
- (a) It begins on a bare rock. ~~P~~
- ~~(b)~~ It occurs on a deforested site.
- (c) It follows primary succession. ✓
- (d) It is similar to primary succession except that primary succession has a relatively fast pace. X

Slower.

## 60 Important questions

56. The rate of secondary succession is faster than primary succession because

- ~~(a)~~ soil or sediment is already present
- (b) water is available in large quantity
- (c) climax community is already present
- (d) pH of soil is favourable.



# 60 Important questions

57. About 71% of total global carbon is found in-

- ~~(a) Oceans~~ → ✓
- (b) Forests
- (c) Grassland
- (d) Agro-ecosystem

## 60 Important questions



58. An ecosystem which can be easily damaged but can : recover after some time if damaging effect stops, will be having \_\_\_\_\_
- (a) Low stability and high resilience
  - (b) high stability Low resilience
  - (c) Low stability Low resilience
  - (d) high stability high resilience.

## 60 Important questions



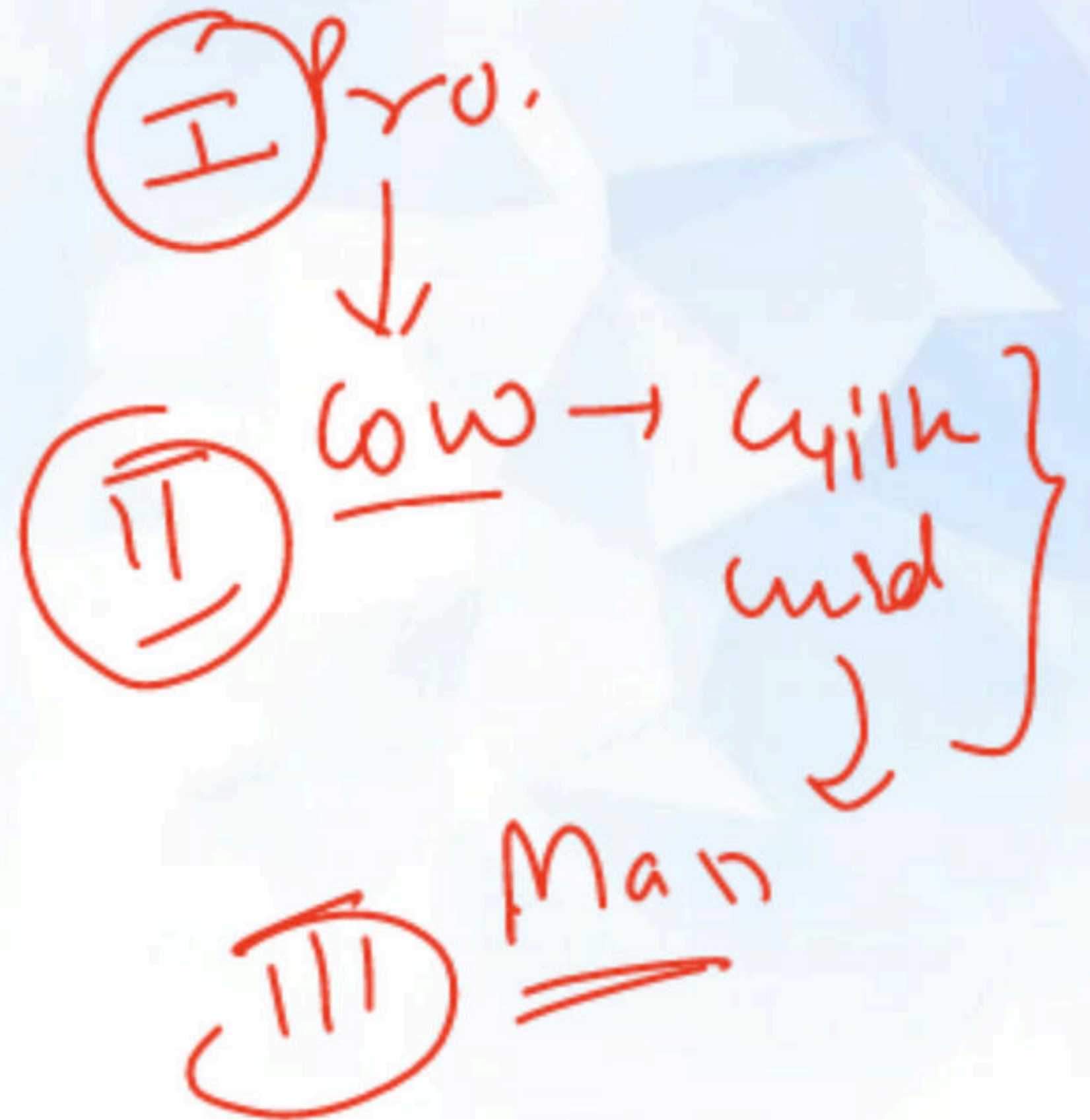
59. What is the amount of average price tag on nature's life Support services determined by Robert Constanza and his colleagues?

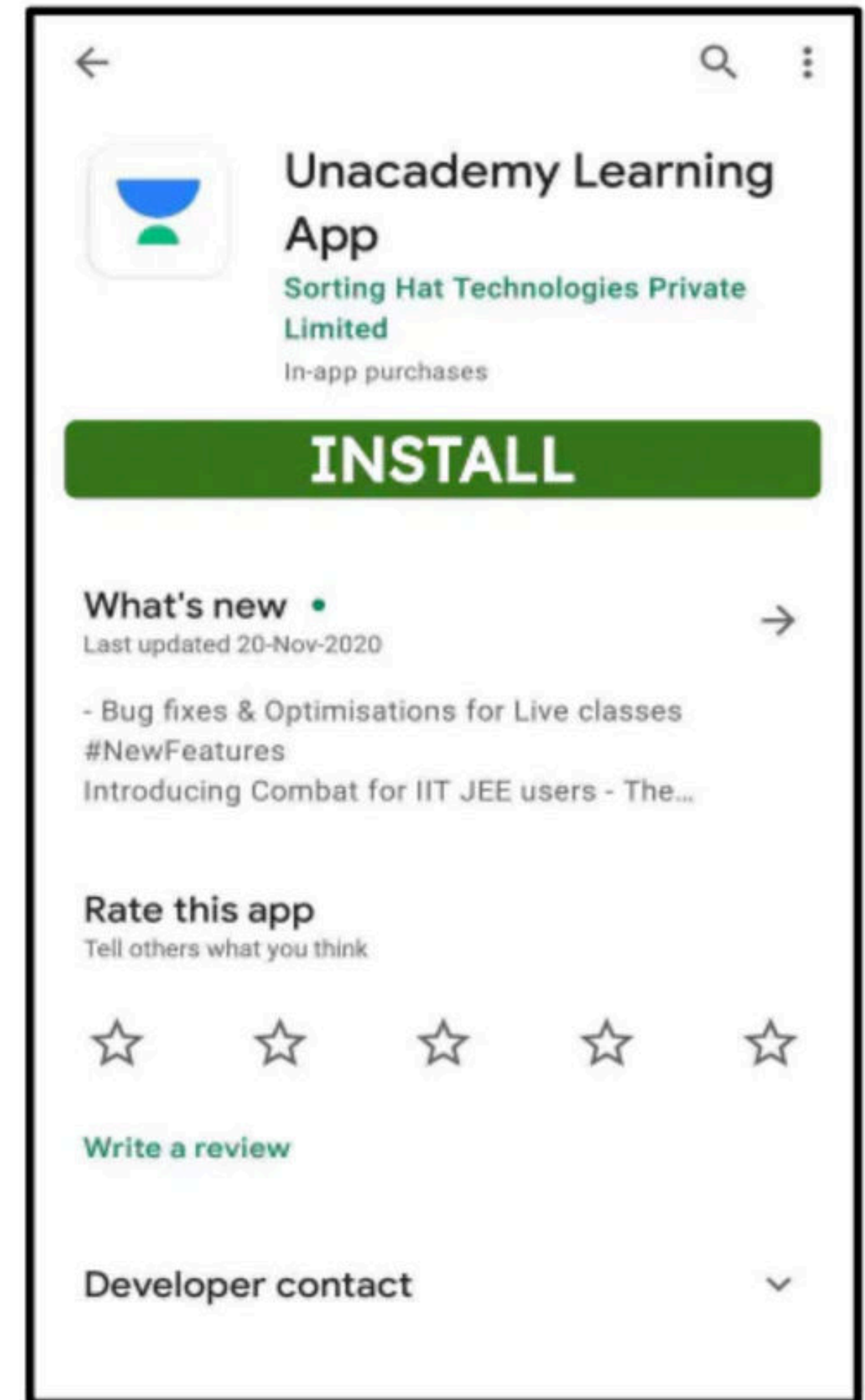
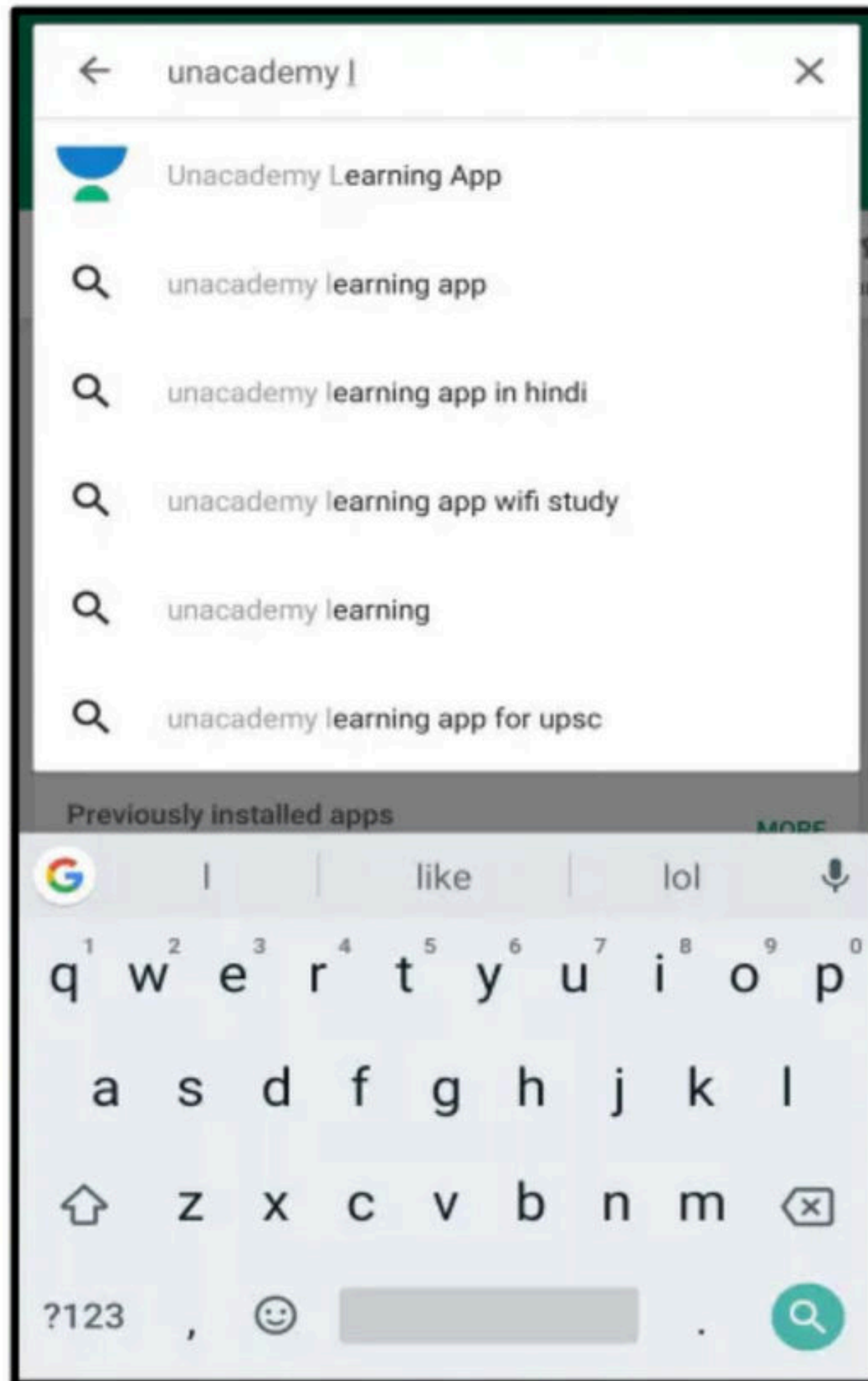
- (a) US \$ 3 trillion a year
- (b) US\$ 13 trillion a year
- (c) US \$ 23 trillion a year
- (d) US \$ 33 trillion a year

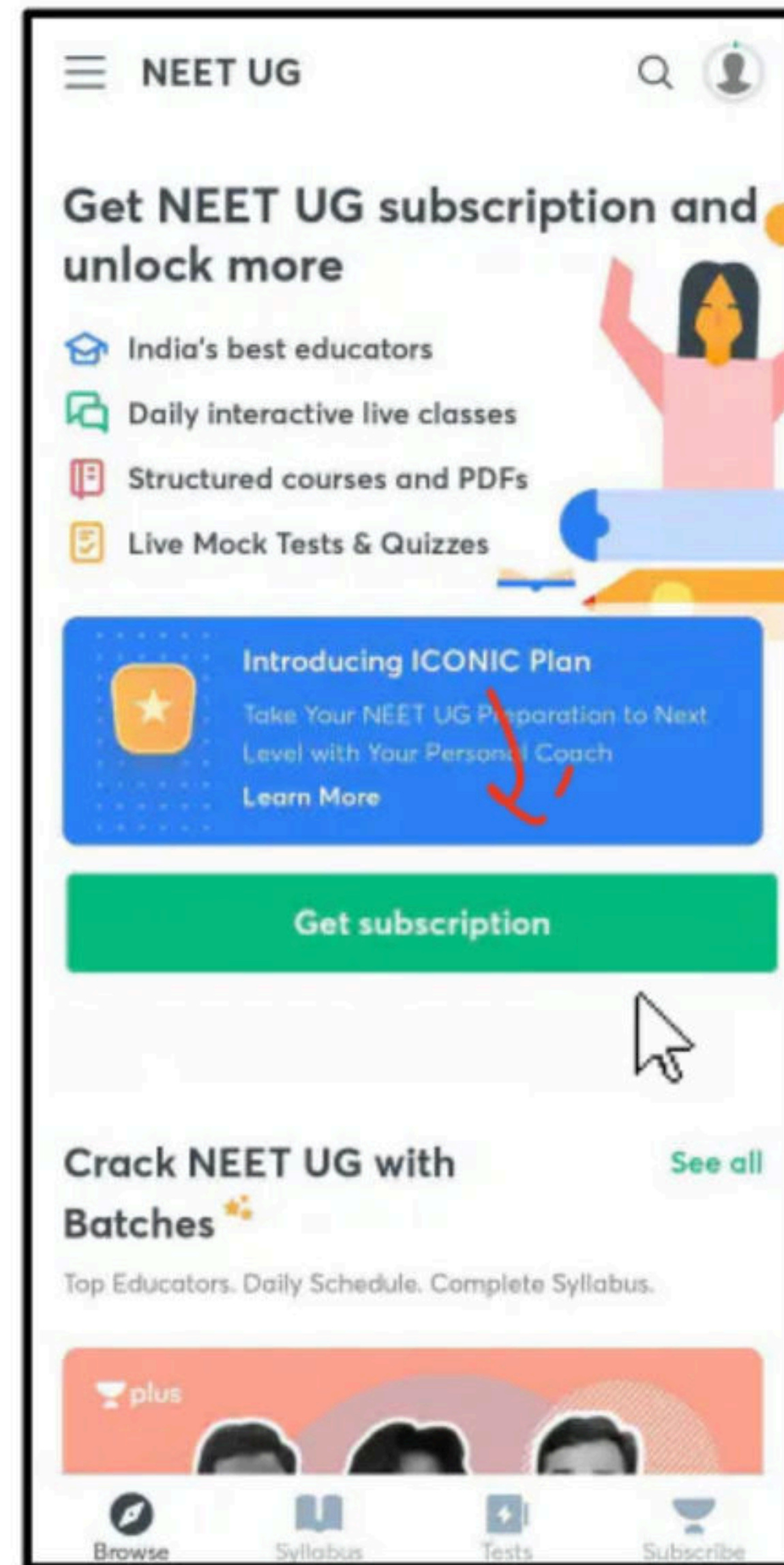
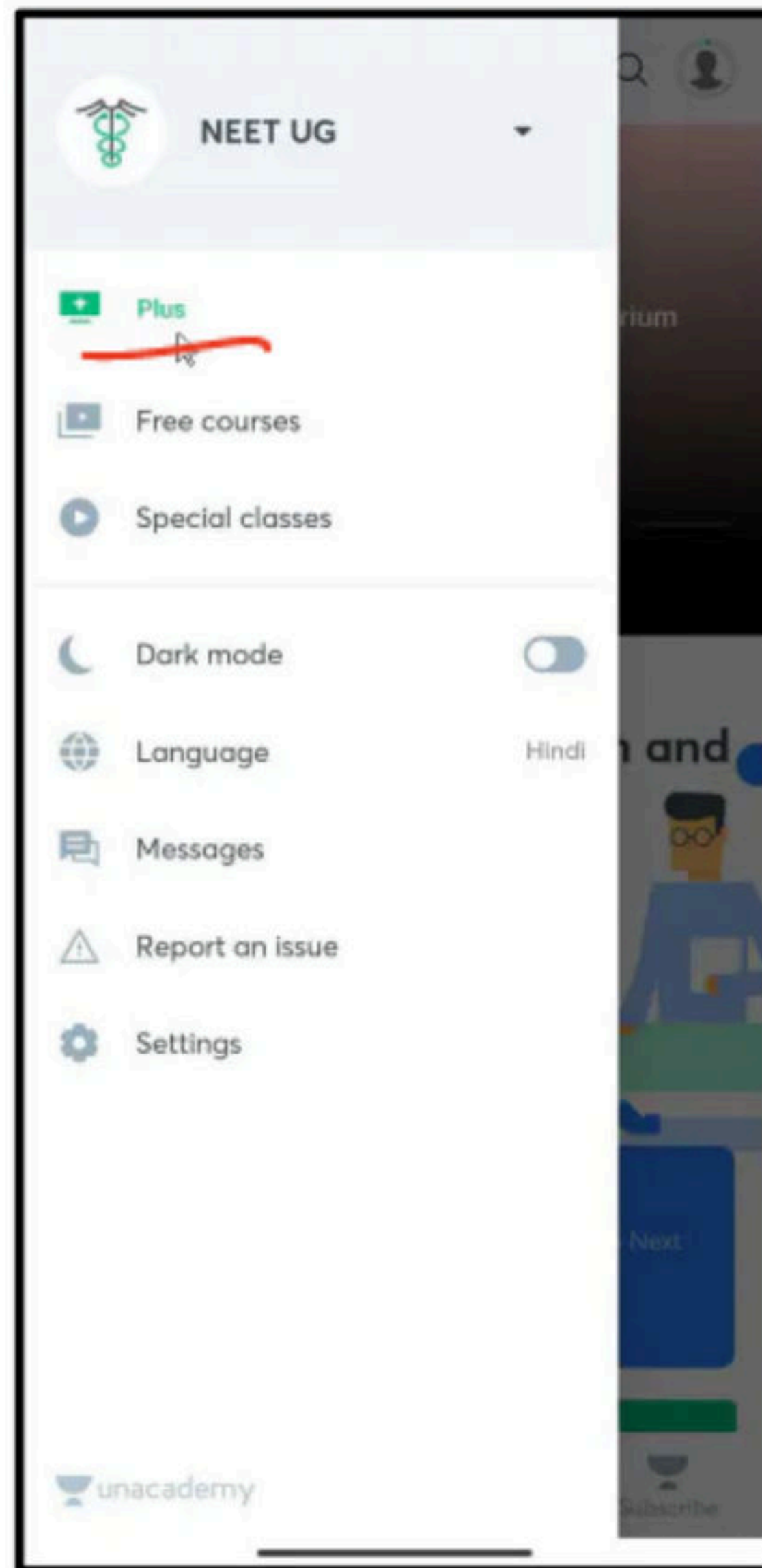
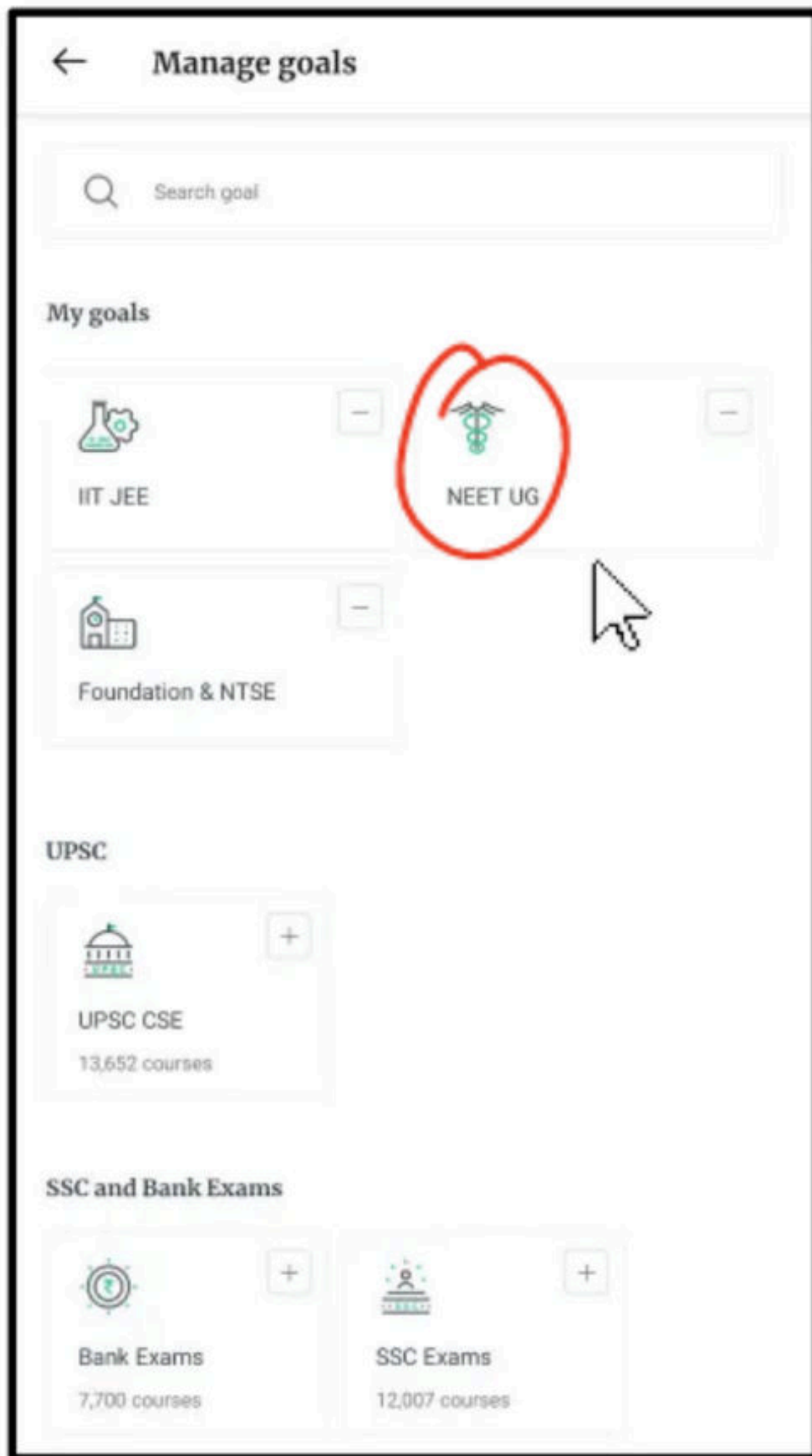
# 60 Important questions

60. Mr X is eating curd / Yoghurt. For this food intake in a food chain he can be considered as occupying.

- (a) First Trophic level
- (b) Second Trophic level
- ~~(c) Third trophic level~~
- (d) Fourth trophic level







5:50 PM

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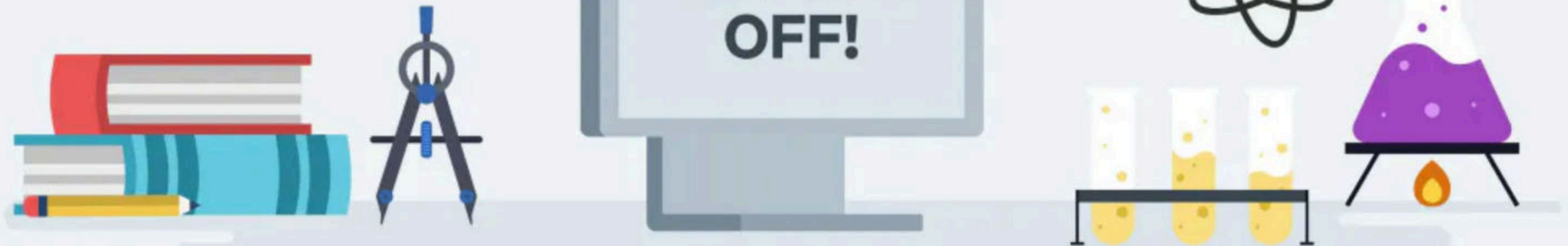
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