



# BIOLOGY

## BOOKS - MBD -HARYANA BOARD

### ORGANISM AND POPULATION

#### Example

1. How is diapause different from hibernation?



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2. If a marine fish is placed in a fresh water aquarium, will the fish be able to survive? Why or why not?



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3. Define phenotypic adaptation. Give one example.



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4. Most living organisms cannot survive at temperature above  $45^{\circ}\text{C}$ . How are some microbes able to live in habitats with temperature exceeding  $100^{\circ}\text{C}$ ?



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5. List the attributes that populations possess but not the individuals.



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6. If a population growing exponentially double in size in 3 years, what is the intrinsic rate of increase ( $r$ ) of the population?



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7. Name important defence mechanisms in plants against herbivory.



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8. An orchid plant is growing on the branch of mango tree. How do you describe this interaction between the orchid and the mango tree?



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9. What is the ecological principle behind the biological control method of managing with pest insects?



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**10. Distinguish between the following :**

Hibernation and aestivation



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**11. Distinguish between the following :**

Ectotherms and endotherms.



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**12.** Write short notes on :

adaptations of desert plants and animals.



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**13.** Write short notes on :

adaptation of plants to water scarcity.



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**14.** Write short notes on :

behavioural adaptations in animals.



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**15.** Write short notes on :

importance of light to plants.



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**16.** Write short notes on :

effect of temperature or water scarcity and the adaptation of animals.



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**17.** List the various biotic environmental factors.



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**18.** Give an example for:

An endothermic animal.



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**19.** Give an example for:

An ectothermic animal.



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**20.** Give an example for:

An organism of benthic zone.



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**21.** Define population and community.



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**22.** Define the following terms and give one example for each:

## Commensalism



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**23.** Define the following terms and give one example for each:

Parastism



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**24.** Define the following terms and give one example for each:

## Camouflage



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**25.** Define the following terms and give one example for each:

Mutualism



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**26.** Define the following terms and give one example for each:

## Interspecific



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27. Define the following terms and give one example for each:

Competition



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28. Define the following terms and give one example for each:

## Symbiosis



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**29.** Define the following terms and give one example for each:

Mimicry.



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**30.** With the help of suitable diagram describe the logistic population growth curve.



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**31.** List any three important characteristics of a population and explain.



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**32.** Define ecology?



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**33.** What is physiological ecology?



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**34.** What do we study in ecology?



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**35.** Who coined the term ecology ?



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**36.** List the stages of development in field of ecology.



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**37.** What is the basic unit of ecology?



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**38.** What are the key elements that lead to so much variation in the physical and chemical

condition of different habitats?



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**39.** What is environment?



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**40.** Define microclimate.



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**41. Define habitat and niche.**



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**42. List any two unique habitats.**



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**43. What are ectotherms?**



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**44.** What is osmoregulation? Name the osmoregulatory apparatus of human environment.



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**45.** How thermoregulation is achieved in the polar bears?



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**46.** What are osmoconformers ?Give one example.



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**47.** What are phenotypic adaptation?



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**48.** What causes annual variations in the intensity and duration of temperature?



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**49.** Name two factors that causes the formation of major biomes.



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**50.** Define Ecotype.



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**51.** Cion the term for shade tolerant and sun adapted plants.



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**52.** What are ephemerals ?



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**53.** Write two adaptations of hydrophytes.



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**54.** List three kinds of migrations.



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**55.** What is population?



**Watch Video Solution**

**56.** Define biotic community.



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**57.** Why is the thermoregulation more effectively achieved in larger animals than in smaller ones ?



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**58.** List the animal parasites.



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**59.** What is ecological niche?



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**60.** Why is the polar region not a suitable habitat for tiny humming birds ?



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**61.** Define species.



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**62.** What is the most significant adaptation of hydrophytes?



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**63.** Define Law of Tolerance.



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**64.** What are sciophytes?



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**65.** What do you mean by biotic community?



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**66.** Define commensalism.



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**67.** Define amensalism.



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**68.** Which interaction is possessed by termites and flagellates?



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**69.** Name two organisms associated to form lichens.



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70. What is diapause?



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71. What is the most concrete and easily observable unit in the environment?



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72. How do you differentiate habitat from environment?





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**73.** Differentiate habitat and microhabitat.



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**74.** What are the effects of organisms on habitat?



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**75.** Differentiate eurythermal, stenothermal and euryhaline animals.



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**76.** What is soil?



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**77.** Write edaphic factors affecting the vegetation of given area.



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**78.** Discuss components of soil with their name.



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**79.** What is top soil?



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**80.** Write a brief note on soil importance.



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**81.** What is Humus?



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**82.** What are the main physical factors influencing land organisms?



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**83.** Which one of the eurythermal or stenothermal species is likely to survive increased global temperatures? Give one reason for your answer.



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**84.** Explain how is orchid plant adapted to changes in temperature and humidity.



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**85.** Give adaptations in terrestrial animals for locomotion.



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**86.** Explain how buoyant conditions are obtained by aquatic plants.



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**87.** How does the burrowing habitat help desert animals to survive in scarcity of water?



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**88.** How do plants adapt to oligotrophic soils ?



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**89.** Define the following terms:

Migration



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**90.** Define the following terms:

Stratosphere



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**91.** Define the following terms:

Community



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**92.** Define the following terms:

biosphere.



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**93.** Explain the following terms:

Mimicry



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**94.** Explain the following terms:

Acclimatisation



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**95.** Explain the term population with reference to ecology. Define metapopulation.



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**96.** Distinguish between population and community.



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**97.** Explain population density.



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**98.** Compare j-shaped pattern with S-shaped pattern of population growth.



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**99.** Differentiate natality rate and death rate.



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**100.** How does age distribution help in study of population.



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**101.** (a) Write any two differences between Natality and Mortality rates.

(b) Explain three kinds of population with regard to age distribution.



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**102.** How does population size increase or decrease?



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**103.** Discuss,life history traits of an organism have evolved in relation to the constraints imposed by biotic and abiotic factros in their habitat.



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**104.** What is predator -prey relationship?Give example.



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**105.** Discuss role of predators in an ecosystem.



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**106.** Many prey organisms have developed different defence mechanisms. Give a few examples.



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**107.** "Herbivores are the predators of plants". Discuss a few defence mechanisms of

plants against herbivory.



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**108.** What is parasitism? Define parasite, host. What are kinds of parasite?



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**109.** What is brood parasitism? Give an example.



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**110.** List a few adaptations which parasites have developed.



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**111.** Write a note on Protocooperation.



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**112.** Define mutualism. Give examples.





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**113.** Define commensalism. Give examples.



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**114.** Differentiate amensalism and commensalism.



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**115.** How is the halophyte *Rhizophora* adapted to survive in its habitat? Explain.



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**116.** Explain any two adaptations in mangroves to the conditions prevailing in Sundarbans.



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**117.** Define adaptation. Explain the phenomenon with suitable example.



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**118.** How do the plants adapt to water scarcity environment?



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**119.** What is the difference between climate and weather?



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**120.** What are symbiosis ,predation and parasitism?



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**121.** If a marine fish is placed in a fresh water aquarium, will the fish be able to survive? Why or why not?



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**122.** Most living organisms cannot survive at temperature above  $45^{\circ}\text{C}$ . How are some microbes able to live in habitats with temperature exceeding  $100^{\circ}\text{C}$ ?



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**123.** Differentiate between immigration and emigration



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**124.** Explain briefly about:

Ecological niche



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**125.** Explain briefly about:

Microhabitat.



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**126.** Why is atmosphere considered a "treasure house of vital resources"?



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**127.** Explain how tolerance to environmental factors determines distribution of species .



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**128.** What are the different types of adaptations in animals ? Explain with suitable examples .



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**129.** Discuss in detail various adaptations found in plants and animals in snowy winter of polar regions.



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**130.** How do desert plants prevent loss of water?



**Watch Video Solution**

**131.** What is migration? Explain migration as a strategy of adaptation in animal.



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**132.** How are the concepts of biotic potential , environmental resistance and carrying capacity related population growth ?



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**133.** What is carrying capacity ?



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**134.** What is competition ?Why it is not true always ?Explain competitive release and Gause's competitive exclusion principle.Write contribution of Mac Arthur.



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**135.** Illustrate symbiosis with any four examples.



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## Exercise

**1.** Fill in the blanks with suitable words:

The plants growing in saline soil are called as

..... .



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2. Fill in the blanks with suitable words:

The optimal capacity of the organism to produce offspring is called..... .



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3. Fill in the blanks with suitable words:

Rapid increase in human population is called  
..... .



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4. Fill in the blanks with suitable words:

Mathematical expression of the growth of population is called.....



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5. Fill in the blanks with suitable words:

Yeast cells grown in a culture medium show ..... growth curve.



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6. Fill in the blanks with suitable words:

Main cause of population explosion is

.....



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7. State true or false:

Frog shows aestivation in winters and

hibernation in summers



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**8.** State true or false:

Cats and owls are ecological equivalents.



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**9.** State true or false:

Term biocoenosis refers to ecosystem.



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**10.** State true or false:

Most important ecological factor is light.





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**11.** State true or false:

Sheep is a short-day animal, while starling is a long -day animal.



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**12.** Coin one word for the following statements:

Environmental factors which resist the increase in population as proposed by Malthus.



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**13.** Coin one word for the following statements:

Study of soil.



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**14.** Coin one word for the following statements:

Plants growing in sandy soil.



**Watch Video Solution**

**15.** Coin one word for the following statements:

Ecological study of single species.



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**16.** Coin one word for the following statements:

Number of births per 1000 individuals of a population per year.



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**17.** An association of different interrelated populations belonging to different species in common environment which can survive in nature is called:

A. Biotic community

B. Population

C. Herd

D. Family.

**Answer:**



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**18.** A direct food relation between two species of animals in which one animal kills and feeds on another is referred to as:

A. Predation

B. Parasitism

C. Symbiosis

D. Scavenging.

**Answer:**



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**19.** An association of two species where one is benefited and other remains unaffected or unharmed, is called:

A. Symbiosis

B. Parasitism

C. Predation

D. Commensalism.

**Answer:**



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**20.** Which one of the following is protective deice?

A. Camouflage

B. Competition

C. Symbiosis

D. Commensalism.

**Answer:**



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**21.** Plants growing on sand and gravel are called as:



A. Eremophytes

B. Psammophytes

C. Psilophytes

D. Oxylophytes.

**Answer:**



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**22.** Select the statement which best explains commensalism:-

A. One organism is benefited.

B. Both the organisms are benefited.

C. One organism is benefited other is not affected.

D. One organism is benefited other is affected.

**Answer:**



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**23.** Community is defined an aggregation of:-

- A. individuals of same kind
- B. individuals of different kinds
- C. individuals of a population
- D. populatins of different species.

**Answer:**



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**24.** Parasite can be explained as an organism which depends on others:-

A. others for food

B. others for shelter

C. others for both food and shelter

D. others for reproduction.

**Answer:**



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25. Study of interrelationships between living organisms and their environments is called:

- A. Ecology
- B. Phytosociology
- C. Ecosystem
- D. Phytogeography.

**Answer:**



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