

## Chapter 13 Organisms and Populations

1. Animals from colder climates generally have shorter limbs. This is called

- (a) Allen's rule
  - (b) Johnson's rule
  - (c) Arber's rule
  - (d) Niche rule
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2. Niche is defined as

- (a) a component of an ecosystem
  - (b) an ecologically adapted zone of a species
  - (c) the physical position and functional role of a species within the community
  - (d) all plants and animals living at the bottom of a water body.
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3. If natality is balanced by mortality in a population at a given time, there will be a/an

- (a) decrease in the population size
  - (b) increase in the population size
  - (c) zero population growth
  - (d) population explosion
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4. Mycorrhiza is an example of

- (a) ectoparasitism
  - (b) mutualism
  - (c) endoparasitism
  - (d) predation
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5. The interspecific interaction in which one partner is benefitted and the other is unaffected (neutral), is called

- (a) amensalism
  - (b) mutualism
  - (c) competition
  - (d) commensalism
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6. Individuals of one kind, i.e., one species occupying a particular geographic area, at a given time form a/an

- (a) community
  - (b) biome
  - (c) population
  - (d) deme
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7. The formula of exponential population growth curve, is

- (a)  $dN/dt = rN$
  - (b)  $dt/dN = rN$
  - (c)  $dN/rN = dt$
  - (d)  $rN/dN = dt$
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8. Niche overlap indicates

- (a) mutualism between two species
  - (b) active cooperation between two species
  - (c) sharing of one or more resources between the two species
  - (d) two different parasites on the same host.
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9. Amensalism is an association between two species where [NCERT Exemplar]

- (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.
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10. A population has more young individuals compared to the older individuals. What would be the status of the population after some years? [NCERT Exemplar]

- (a) It will decline
  - (b) It will stabilise
  - (c) It will increase
  - (d) It will first decline and then stabilise
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11. Which of the following would necessarily decrease the density of a population in a given habitat? [NCERT Exemplar]

- (a) Natality > mortality
  - (b) Immigration > emigration
  - (c) Mortality and emigration
  - (d) Natality and immigration
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12. What parameters are used for tiger census in our country's national parks and sanctuaries? [NCERT Exemplar]

- (a) Pug marks only
  - (b) Pug marks and faecal pellets
  - (c) Faecal pellets only
  - (d) Actual head counts
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13. The organisms which can tolerate and thrive in a wide range of temperature, are called \_\_\_\_\_ .

14. The salinity (measured in parts per thousand) in the sea is \_\_\_\_\_ .

15. \_\_\_\_\_ is any attribute of an organism (morphological, physiological and behavioural) that enables it to live and reproduce in the given area. 24 Match the terms in Column I with their

16. \_\_\_\_\_ refers to the number of births during a given period of time that are added to the initial density.

17. In a logistic growth curve, the final phase is an \_\_\_\_\_ .

18. \_\_\_\_\_ fish breed only once in their life time.

19. An orchid growing as an epiphyte on a mango tree, is an example of \_\_\_\_\_ .

20. \_\_\_\_\_ is an important process as it facilitates energy transfer through various organisms.

21. \_\_\_\_\_ showed that five closely related species of warblers living on the same were able to avoid competitions and co-exist.

22. Zooplanktons enter, a state of suspended development under unfavourable conditions.

23. Match the terms in Column 1 with those in Column II.

Column I	Column II
A. Amensalism	1. The interspecific interaction, where both are equally benefitted.
B. Parasitism	2. The interspecific interaction, where one is benefitted and one is neutral.
C. Mutualism	3. The interspecific interaction, where one is harmed and the other is neutral.

D. Commensalism	4. The interspecific interaction, where one is benefitted and one is harmed.
E. Competition	

24 Match the terms in Column I with their descriptions in Column II.

Column I	Column II
A. Homeostasis	1. Animal which can tolerate a wide range of temperature.
B. Conformers	2. The number of births in a given population at a given time.
C. Natality	3. Per capita births in a given population.
D. Eury- thermal	4. A Maintenance of a relatively constant internal environment.
	5. Animals which change their body temperature according to the ambient temperature.

25. Zooplanktons enter a state of suspended development, called diapause, under unfavourable conditions. [True/False]

26. The success of mammals is due to their ability to change their body temperature according to their surroundings. [True/False]

27. Small animals like shrews and humming birds are rarely found in polar regions. [True/False]

28. Organisms living in water bodies (lake, sea, river) do not face any water related problems. [True/False]

29.  $dS/dt=rN$  is the equation describing logistic growth. [True/False]

Directions (Q30 to Q32): Mark the odd one in each of the following groups.

30. Aestivation, Migration, Hibernation, Diapause.

31. Parasitism, Predation, Commensalism, Amensalism.

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32. Ticks, Lice, Copepods, Tapeworm.

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33. Who is considered as the 'Father of Ecology' in India?

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34. What is ecology at the organismic level?

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35. What causes the annual variation in the intensity and duration of temperature?

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36. Name the two factors that cause the formation of major biomes.

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37. What does the ecological niche of an organism represent?

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38. Why are mango trees unable to grow in temperate climate? [AI 2016C]

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39. Mention the effect of global warming on the geographical distribution of stenothermals like amphibians. [Foreign 2012]

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40. Between amphibians and birds, which will be able to cope with global warming? Give reason. [HOTS]

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41. How do herbs and shrubs survive under the shadow of big canopied trees in forests?

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42. Name a 'photoperiod'-dependent process, one each in plants and in animals. [Foreign 2013]

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43. Mention any two activities of animals which get cues from diurnal and seasonal variations in light intensity. [Delhi 2011C]

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44. Why are green algae not likely to be found in the deepest strata of the ocean? [AI 2013] [HOTS]

Or

Why are green plants not found beyond a certain depth in the ocean? [Delhi 2011] [HOTS]

Or

Why are green algae not found at lower depths of a sea? [Delhi 2011C]

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45. What is the advantage of homeostasis to organisms that exhibit it?

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46. Which feature of mammals, is the success rate of them, attributed to?

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47. Why have many animals not evolved thermo-regulation? [HOTS]

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48. What are partial regulators?

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49. What are osmoconformers?

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50. What is migration?

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51. Name the National Park in India where migratory birds arrive in winter from Siberia.

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52. Mention how bears escape from stressful time in winter. [Delhi 2013C]

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53. How do snails escape from the stressful time in summer? [AI2013C]

Or

How do animals like fish and snails avoid summer-related unfavourable conditions? [Delhi 2010]

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54. When and why do animals like frog/bear hibernate?

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55. When and why do animals like snails go into aestivation?

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56. Give an example of an organism that enters 'diapause' and why? [Delhi 2014]

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57. How do seed-bearing plants tide over dry and hot weather conditions? [AI 2013C]

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58. Define adaptation.

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59. How do spines help the cactus plants survive in the desert?

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60. What is meant by Allen's Rule?

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61. Why is population ecology considered an important area of ecology?

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62. If 8 individuals in a laboratory population of 80 fruit flies died in a week, then what would be the death rate of the population for the said period? [Delhi 2010]

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63. In a pond, there were 20 Hydrilla plants. Through reproduction, 10 new Hydrilla plants were added in a year. Calculate the birth rate of the population. [Delhi 2010]

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64. Define population density.

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65. Provide an instance where the population size of a species can be estimated indirectly, without actually counting them or seeing them. [Delhi 2016C]

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66. Define natality.

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67. Define mortality.

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68. What does nature's carrying capacity for a species indicate? [Foreign 2016]

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69. Name two organisms (one plant and one animal) which breed only once in their lifetime.

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70. Why have life history variations evolved?

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71. Mention any two reasons why plants depend on other organisms for their survival, even though they make their own organic food.

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72. Why are cattle and goats not browsing the Calotropis growing in the fields? [Foreign 2011]

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73. Write one common feature among predation, parasitism and commensalism.

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74. What term is given to the predators of plants.

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75. What type of interaction is shown by a sparrow eating the seeds?

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76. An exotic variety of prickly pear introduced into Australia turned out to be invasive. How was it brought under control? [Delhi 2013C]

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77. Why are predators 'prudent' in nature? [HOTS]

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78. Why do predators avoid eating monarch butterfly? How does the butterfly develop this protective feature? [Foreign 2010]

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79. Write what the phytophagous insects feed on. [Delhi 2012]

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80. Why is the problem of predation in plants more severe than that in animals? [HOTS]