



BIOLOGY

BOOKS - NEET PREVIOUS YEAR (YEARWISE + CHAPTERWISE)

ORGANISMS AND POPULATION

Exercise

1. Asymptote in a logistic growth curve is obtained, when

A. The value of 'r' approaches zero

B. $K=N$

C. $K > N$

D. $K < N$

Answer: B



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2. Mycorrhizae are the example of

A. fungistasis

B. amensalism

C. antibiosis

D. mutualism

Answer: D



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3. Gause's principle of competitive exclusion states that:

A. Competition for the same resources

excludes species having different food preferences

B. No two species can occupy the same

niche indefinitely for the same limiting resources

C. Larger organisms exclude smaller ones

through competition

D. More abundant species will exclude the

less abundant species through

competition

Answer: B



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4. When does the growth rate of a population following the logistic model equal zero ? The logistic model is given as $dN/dt = rN(1-N/K)$:

A. when N nears the carrying capacity of the habitat

B. when N/K equals zero

C. when death rate is greater than birth rate

D. when N/K is exactly one

Answer: D



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5. It is much easier for a small animal to run uphill than for a large animal, because:

A. smaller animals have a higher metabolic rate

B. small animals have a lower O_2 requirement the efficiency of muscles in large animals is less than in the small animals

C. it is easier to carry a small body weight

D.

Answer: A



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6. Competitive exclusion principle stating that inferior species is eliminated eventually after prologed competition was given by

A. C Darwin

B. GF Gause

C. MacArthur

D. Verthulst and Pearl

Answer: B



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7. If '+' sign is assigned to benefited interaction '-' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+' '-' refers to:

- A. mutualism
- B. amensalism
- C. commensalism
- D. parasitism

Answer: D



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8. Which of the following is correct for r-selected species ?

- A. Large number of progeny with small size
- B. Large number of progeny with large size
- C. Small number of progeny with small size
- D. Small number of progeny with large size

Answer: A



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9. An association of individuals of different species living in the same habitat and having functional interactions is :

- A. ecological niche
- B. biotic community
- C. ecosystem
- D. population

Answer: B



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10. In which of the following interaction both partners are adversely affected ?

A. Competition

B. Predation

C. Parasitism

D. mutualism

Answer: A



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11. A biologist studied the population of rats in a barn. He found that the average natality was 250, average mortality 240, immigration 20 and emigration 30. The net increase in populations is :

A. 10

B. 15

C. 5

D. zero

Answer: D



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12. Which one of the following processes during decomposition is correctly described?

A. Fragmentation-Carried out by organisms such as earthworm

B. Humification-Leads to the accumulation of a dark coloured substance humus, which undergoes microbial action at a very fast rate

C. Catabolism-Last step in the decomposition under fully anaerobic condition

D. Leaching-Water soluble inorganic nutrients rise to the top layers of soil

Answer: A



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13. A sedentary sea anemone gets attached to the shell lining of hermit crab. The association is

A. ectoparasitism

B. symbiosis

C. commensalism

D. amensalism

Answer: B



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14. What type of human population is represented by the following age pyramid ?



- A. Vanishing population
- B. Stable population
- C. Declining population
- D. Expanding population

Answer: C



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15. Considered the following four conditions (A-D) and select the correct pair of them as adaptation to environment in desert lizards.

The conditions

(a) Burrowing in soil to escape high temperature

(b) Losing heat rapidly from the body during high temperature

(c) Bask in sun when temperature is low

(d) Insulating body due to thick fatty dermis
options

A. III, IV

B. I, III

C. II, IV

D. I, II

Answer: B



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16. Which one of the following is categorised as a parasite in true sense

A. The female *Anopheles* bites and sucks blood from humans

B. Human foetus developing inside the uterus draws nourishment from the mother

C. Head louse living on the human scalp as well as laying eggs on human hair

D. The cuckoo (koel) lays its eggs in crow's nest

Answer: C



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17. The figure given below is a diagrammatic representation of response of organisms to abiotic factors. What do (i), (ii) and (iii) represent respectively ?



A.

<i>I</i>	<i>II</i>	<i>III</i>
Conformer	Regulator	Partial regulator

<i>I</i>	<i>II</i>	<i>III</i>
B. Regulator	Partial regulator	Conformer

C.

<i>I</i>	<i>II</i>	<i>III</i>
Partial regulator	regulator	Conformer

D.

<i>I</i>	<i>II</i>	<i>III</i>
Regulator	Conformer	Partial regulator

Answer: D



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18. Which one of the following is one of the characteristics of a biological community?

A. Stratification

B. Natality

C. Mortality

D. Sex-ratio

Answer: A



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19. A country with a high rate of population growth took measures to reduce it. The figure below shows age sex pyramids of populations. A and B twenty years apart. Select the correct interpretation about them



A. A' is more recent and shows slight reduction in the growth rate

B. B' is earlier pyramid and shows stabilised growth rate

C. B' is more recent showing that
population is very young

D. A' is the earlier pyramid and no change
has occurred in the growth rate

Answer: A



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20. Reduction in vascular tissue, mechanical
tissue and cuticle is characteristic of

A. xerophytes

B. mesophytes

C. epiphytes

D. hydrophytes

Answer: D



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21. Which are true about the following statements about kangaroo rats

(a) They have dark colour, high rate of

reproduction and excrete solide urine

(b) They do not drink water, breathe at slow rate, and have their body covered with thick hair

(c) The feed on dry seeds and do not require drinking water

(d) They excrete very concentrated urine and do not use water to regulate body temperature

A. III and I

B. I and II

C. III and II

D. II and III

Answer: C



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22. The table below gives the populations (in thousands) of ten species (A-J) in four areas (a-d) consisting of the number of habitats given within brackets against each. Study given within brackets against each. Study the table and answer the question which follows



Which area out of a to d shows maximum species diversity ?

A. b

B. c

C. d

D. a

Answer: C



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23. A high density of elephant population in an area can result in

- A. mutualism
- B. intraspecific competition
- C. interspecific competition
- D. predation on one another

Answer: B



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24. The population of an insect species shows an explosive increase in numbers during rainy season followed by its disappearance at the end of the season. What does this show ?

A. S-shpaed or sigmoid growth of this insect

B. The food plants mature and die at the end of the rainy season

C. Its population growth curve is of J-type

D. The population of its predators
increases enormously

Answer: C



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25. Geometric representation of age structure
is a characteristic of :

A. biotic community

B. population

C. landscape

D. ecosystem

Answer: B



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26. If the mean and the median pertaining to a certain character of a population are of the same value, the following is most likely to occur:-

- A. normal distribution
- B. bi-modal distribution
- C. T-shaped curve
- D. skewed curve

Answer: A



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27. The formula for exponential population growth is

A. $dt / dN = rN$

B. $dN / rN = dt$

C. $rN / dN = dt$

D. $dN / dt = rN$

Answer: D



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28. Niche overlap indicates

A. active cooperation between two species

B. two different parasites on the same host

C. sharing of one or more resources

between the two species

D. mutualism between two species

Answer: B



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29. Annual migration does not occur in the case of

A. salmon

B. siberian crane

C. salamander

D. arctic fern

Answer: C



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30. Praying mantis is a good example of

A. Mullerian mimicry

B. warning colouration

C. social insects

D. camouflage

Answer: C



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31. Which of the following is not true for a species ?

A. Members of a species can interbreed

B. Variations occur among members of a species

C. Each species is reproductively isolated from every other species

D. Gene flow does not occur between the populations of a species

Answer: D



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32. Animals have the innate ability to escape from predation. Examples for the same are given below. Select the incorrect example

A. enlargement of body size by swallowing air in puffer fish

B. melanism in moths

C. poison fangs in snakes

D. colour change in Chamaeleon

Answer: C





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33. Which one of the following pairs is mismatched?

A. Savanna -Acacia trees

B. Prairie -Epiphytes

C. Tundra -Permafrost

D. Coniferous forest -Evergreen trees

Answer: B



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34. In which one of the following pair is the specific characteristic of soil not correctly matched ?

- A. Laterite -Contains aluminium compound
- B. Terra rossa - Most suitable for roses
- C. Chernozems-Richest soil in the world
- D. Black soil-Rich in calcium carbonate

Answer: D



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35. What is a keystone species?

A. A species which makes up only a small proportion of the total biomass of a community, yet has a huge impact on the community's organisation and survival

B. A common species that has plenty of biomass, yet has a fairly low impact on

the community's organisation

C. A rare species that has minimal impact on the biomass and on other species in the community

D. A dominant species that constitutes a large proportion of the biomass and which affects many other species

Answer: A



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36. In which one of the following habitats does the diurnal temperature of soil surface vary most?

A. Shrubland

B. Forest

C. Desert

D. Grassland

Answer: C



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37. Diffuse porous woods are characteristic of plants growing in

A. temperate climate

B. tropics

C. alpine region

D. cold winter regions

Answer: B



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38. Mycorrhiza is an example of

- A. endoparasitism
- B. decomposers
- C. symbiotic relationship
- D. ectoparasitism

Answer: C



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39. Semilog of per minutes growing bacteria is plotted against time. What will be shape of graph?

A. Sigmoid

B. Hyperbola

C. Ascending straight line

D. Descending straight line

Answer: C



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40. Choose the correct sequence of stages of growth curve for bacteria

A. lag, log, stationary, decline phase

B. lag, log, stationary phase

C. stationary, lag, log, decline phase

D. decline, lag, log phase

Answer: A



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41. Which type of association is found in between entomophilous flower and pollinating agent ?

- A. mutualism
- B. Commensalism
- C. Cooperation
- D. Co-evolution

Answer: A



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42. Which of the following is a correct pair?

- A. Cuscuta-Parasite
- B. Dischidia - Insectivorous
- C. Opuntia-Predator
- D. Capsella-Hydrophyte

Answer: A



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43. Two different species cannot live for long duration in the same niche or habitat. This law is called

A. Allen's law

B. Mendel's law

C. Gause's competitive exclusion principle

D. Weismann's theory

Answer: C



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44. What is true for individuals of same species ?

- A. Live in same niche
- B. Live in same habitat`
- C. Interbreeding
- D. Live in different habitats

Answer: C



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45. Special kinds of roots called pneumatophores are characteristics of the plants growing in

A. sandy soils

B. saline soils

C. marshy places and salt lakes

D. dryland regions

Answer: C



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46. Temperature changes in the environment affect most of the animals which are

A. homeothermic

B. aquatic

C. poikilothermic

D. desert living

Answer: C



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47. Which part of the world has high density of organisms ?

- A. Deciduous forests
- B. Grasslands
- C. Savannas
- D. Tropical rain forests

Answer: D



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48. A species restricted to a given area is

A. sibling

B. endemic

C. sympatric

D. allopatric

Answer: B



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49. An orchid resembling the female of an insect, so as to be able to get pollinated is due to the phenomenon of

- A. mimicry
- B. pseudocopulation
- C. pseudopollination
- D. pseudoparthenocarpy

Answer: B



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50. Keystone species in an ecosystem are those:

- A. are present in maximum number
- B. are most frequent
- C. attain a large biomass
- D. contribute to ecosystem properties

Answer: D



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51. Niche of a species in an ecosystem refers to its

- A. function at its place of occurrence
- B. place of its occurrence
- C. competitive ability
- D. centre of origin

Answer: A



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52. Desert plants are generally

A. viviparous

B. succulent

C. herbaceous

D. heterophyllus

Answer: B



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53. The concept that 'population tends to increase geometrically while food supply increases arithmetically' was put forward by :

A. Stuart Mill

B. Adam Smith

C. Charles Darwin

D. Thomas Malthus

Answer: D



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54. Which of the following pairs is correctly matched

A. Uricotelism-Aquatic habitat

B. Parasitism-Intra -specific relationship

C. Excessive perspiration-Xeric adaptation

D. Stream lined body-Aquatic adaptation

Answer: D



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55. sunken stomata occur in

A. hydrophyte

B. mesophyte

C. xerophyte

D. halophyte

Answer: C



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56. Which of the following do not have stomata

A. Hydrophytes

B. Mesophytes

C. Xerophytes

D. Submerged hydrophytes

Answer: D



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57. Where do tropical forests occur in India ?

A. Jammu and Kashmir

B. Rajasthan

C. Kerala and Assam

D. The forests do not occur in India

Answer: C



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

- A. stenohaline
- B. euryhaline
- C. anadromous
- D. catadromous

Answer: A



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59. Soil that is best suited for plant growth is:

A. clay

B. loamy

C. sandy

D. gravel

Answer: B



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60. The branch of science which studies the interactions among organisms and between organisms and physical environment is called as

A. Ecology

B. Ecosystem

C. Phytogeography

D. Ethology

Answer: A



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61. The sum total of the population of the same kind of organisms constitute

- A. colony
- B. genus
- C. community
- D. species

Answer: D



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62. Soil particles determine its

A. texture

B. field capacity

C. water holding capacity

D. soil flora

Answer: A



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63. A fertile agricultural soil appears dark coloured at the surface as compared to soil one metre down. The reason for colour of top soil is

- A. more moisture
- B. rich in organic matter
- C. rich in iron, calcium and magnesium
- D. recent formation

Answer: B



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64. River water deposits

- A. loamy soil
- B. alluvial soil
- C. laterite soil
- D. sandy soil

Answer: B



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65. Storage capacity of the soil is the extent to which it can hold

In soil, water available for plants is

- A. surface water
- B. hygroscopic water
- C. gravitational water
- D. capillary water

Answer: D



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66. Deep black soil is productive due to high proportion of

- A. sand and zinc
- B. gravel and calcium
- C. clay and humus
- D. silt and earthworm

Answer: C



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67. A mutually beneficial association necessary for survival of both partners are

A. mutualism/symbiosis

B. Commensalism

C. amensalism

D. Both (a) and (b)

Answer: A



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68. The relation between algae and fungi in a lichen is

A. symbiosis

B. Parasitism-Intra -specific relationship

C. commensalism

D. proto cooperation

Answer: A



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69. Competition for light, nutrients and space is most severe between

A. closely related organisms growing in different niches

B. closely related organisms growing in the same area/niche

C. distantiy related organisms growing in the same habitat

D. distantly related organisms growing in different niches

Answer: B



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70. Phenomenon when organisms resembling others for escaping from enemies is

A. adaptation

B. mimicry

C. homology

D. analogy

Answer: B



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