

Organisms and Populations

Question 1.

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

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

Answer:

- (a) had no coevolved herbivores

Question 2.

Why you never see cattle 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.

Answer:

- (c) The plant produces poisonous cardiac glycosides.

Question 3.

Which of the following is not an example of prey-predator relationship ?

- (a) Tiger eating a deer
- (b) Plant *Nepenthes* trapping an insect
- (c) Bacteria decomposing organic matter
- (d) Crocodile killing a man

Answer:

- (c) Bacteria decomposing organic matter

Question 4.

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.

Answer:

- (d) Darwin.

Question 5.

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

- (a) Allen's law
- (b) Glogerrule
- (c) Competitive exclusion principle
- (d) Weisman's theory.

Answer:

- (b) Glogerrule

Question 6.

When two similar species live in the same area, they may evolve to become more different in order to

- (a) drive the other species to extinction
- (b) reduce competition
- (c) use up the other species resources
- (d) reduce genetic variation.

Answer:

- (c) use up the other species resources

Question 7.

An interaction between two individuals where one is benefitted while the other is neither benefitted nor harmed is called as

- (a) predation
- (b) symbiosis
- (c) amensalism
- (d) commensalism.

Answer:

- (d) commensalism.

Question 8.

Which of the following exhibits mutualism ?

- (a) Mycorrhizae living on the roots of higher plants.
- (b) Wasps pollinating fig inflorescence.
- (c) Sea anemone often found on the shell of hermit crab.
- (d) All of these

Answer:

- (d) All of these

Question 9.

The interdependent evolution of flowering plants and pollinating insects together is known as

- (a) mutualism
- (b) co-evolution
- (c) commensalism
- (d) co-operation.

Answer:

- (b) co-evolution

Question 10.

Autecology is the

- (a) relation of heterogenous population to its environment
- (b) relation of an individual to its environment
- (c) relation of a community to its environment
- (d) relation of a biome to its environment.

Answer:

- (a) relation of heterogenous population to its environment, (b) relation of an individual to its environment

Question 11.

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.

Answer:

- (c) a zone of transition between two communities

Question 12.

Basic unit of ecological hierarchy is

- (a) population
- (b) community
- (c) ecosystem
- (d) individual.

Answer:

- (d) individual.

Question 13.

Several plant and animal species present together at a place constitute a

- (a) genus
- (b) population
- (c) biome
- (d) community.

Answer:

- (d) community.

Question 14.

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

- (a) epidemiology
- (b) ecology
- (c) ethology
- (d) etiology

Answer:

- (b) ecology

Question 15.

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.

Answer:

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

Question 16.

Seasonal variations on Earth occur due to its

- (a) tilted axis
- (b) rotation around its own axis

- (c) revolution around sun
- (d) both (a) and (c).

Answer:

- (d) both (a) and (c).

Question 17.

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

Answer:

- (d) all of these

Question 18.

Deserts, rainforest, tundra, etc, are examples of

- (a) community
- (b) biome
- (c) ecosystem
- (d) population.

Answer:

- (d) population.

Question 19.

Characteristics of a terrestrial biome are strongly influenced by its

- (a) flora
- (b) climate
- (c) fauna
- (d) all of these.

Answer:

- (b) climate

Question 20.

The key elements that determine differences in environmental conditions of different habitats include

- (a) temperature
- (b) light
- (c) soil
- (d) all of these.

Answer:

- (d) all of these.

Question 21.

Biosphere is

- (a) a component in the ecosystem
- (b) composed of the plants present in the soil
- (c) life in the outer space
- (d) composed of all living organisms present on earth which interact with the physical environment.

Answer:

(d) composed of all living organisms present on earth which interact with the physical environment.

Question 22.

Ecological niche is

- (a) the surface area of the ocean
- (b) an ecologically adapted zone
- (c) the physical position and functional role of a species within the community
- (d) formed of all plants and animals living at the bottom of a lake.

Answer:

- (c) the physical position and functional role of a species within the community

Question 23.

Salt concentration (salinity) of the sea measured in parts per thousand is

- (a) 10 – 5
- (b) 30 – 70
- (c) 0 – 5
- (d) 30 – 37.

Answer:

- (d) 30 – 37.

Question 24.

Formation of tropical forests needs mean annual temperature and mean annual precipitation as

- (a) 18 – 25°C and 150 – 400 cm
- (b) 5 – 15°C and 50 – 100 cm
- (c) 30 – 50°C and 100 – 150 cm
- (d) 5 – 15°C and 100 – 200 cm.

Answer:

- (a) 18 – 25°C and 150 – 400 cm

Question 25.

Which of the following forest plants controls the light conditions at the ground ?

- (a) Lianas and climbers
- (b) Shrubs
- (c) Tall trees
- (d) Herbs

Answer:

- (c) Tall trees

Question 26.

What parameters are used for tiger census in our country's national parks and sanctuaries ?

- (a) Pug marks only
- (b) Pug marks and faecal pellets
- (c) Faecal pellets only
- (d) Actual head counts

Answer:

- (b) Pug marks and faecal pellets

Question 27.

Which of the following would necessarily decrease the density of a population in a given habitat ?

- (a) Natality > mortality
- (b) Immigration > emigration
- (c) Mortality and emigration
- (d) Natality and immigration

Answer:

- (c) Mortality and emigration

Question 28.

A protozoan reproduces by binary fission. What will be the number of protozoans in its population after six generations ?

- (a) 128
- (b) 24
- (c) 64
- (d) 32

Answer:

- (c) 64

Question 29.

Lichens are the associations of

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

Answer:

- (c) fungus and algae

Question 30.

Which of the following is a partial root parasite ?

- (a) Sandal wood
- (b) Mistletoe
- (c) Orobanch
- (d) Ganoderma

Answer:

- (a) Sandal wood

Question 31.

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

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

Answer:

- (c) Tomato

Question 31.

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

- (a) Temperature

- (b) Light
- (c) Other organisms
- (d) Humidity

Answer:

- (c) Other organisms

Question 32.

Mango trees do not and cannot grow in temperate regions. The most important environmental factor responsible for it is

- (a) soil
- (b) temperature
- (c) water
- (d) light.

Answer:

- (b) temperature

Question 33.

Temperature is considered as the most ecologically relevant environmental factor because it affects of organisms.

- (a) physiology
- (b) morphology
- (c) geographical distribution
- (d) all of these

Answer:

- (d) all of these

Question 34.

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

- (a) stenosaline
- (b) stenohaline
- (c) euryhaline
- (d) eurysaline.

Answer:

- (c) euryhaline

Question 35.

A freshwater organism cannot survive in a water body that has greater _____ than its original habitat.

- (a) oxygen content
- (b) depth
- (c) salt concentration
- (d) water clarity

Answer:

- (c) salt concentration

Question 36.

A place has very scanty rainfall, the dominant plants there may be

- (a) Opuntia
- (b) Nymphaea
- (c) Asparagus

(d) both (a) and (c).

Answer:

(d) both (a) and (c).

Question 37.

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.

Answer:

(d) all of these.

Question 38.

Nature and properties of soil depends upon

- (a) climate
- (b) weathering process
- (c) development of soil
- (d) all of these.

Answer:

(d) all of these.

Question 39.

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.

Answer:

(d) all of these.

Question 40.

An animal that can survive at 10°C and 40°C both, can be placed under the category of

- (a) conformers
- (b) regulators
- (c) migratory organisms
- (d) modifiers.

Answer:

(b) regulators

Question 41.

Organisms that can maintain a constant internal temperature are called as

- (a) homoiothermic
- (b) poikilothermic
- (c) oligothermic
- (d) heterothermic.

Answer:

(a) homoiothermic

Question 42.

When we are in a hot room, we sweat profusely. It is a _____ means of maintaining homeostasis.

- (a) morphological
- (b) physiological
- (c) behavioural
- (d) none of these

Answer:

- (b) physiological

Question 43.

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

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

Answer:

- (d) Reduced surface area to volume ratio

Question 44.

When organisms change their location to escape from harsh environment, it is called as

- (a) hibernation
- (b) vernalisation
- (c) migration
- (d) aestivation.

Answer:

- (c) migration

Question 45.

Organisms show migration in order to avoid unfavourable conditions of

- (a) temperature
- (b) food availability
- (c) precipitation
- (d) all of these.

Answer:

- (d) all of these.

Question 46.

Which of the following is an incorrect match ?

- (a) Bacteria – Thick walled resting spores
- (b) Bear – Hibernation
- (c) Zooplanktons – Diapause
- (d) Lizard – Aestivation

Answer:

- (d) Lizard – Aestivation

Question 47.

Adaptation may be

- (a) behavioural
- (b) morphological

- (c) physiological
- (d) all of these.

Answer:

- (d) all of these.

Question 48.

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

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

Answer:

- (c) Adaptation

Question 49.

Opuntia has spine like leaves which help in

- (a) reducing the rate of transpiration
- (b) increasing the rate of transpiration
- (c) increasing the rate of photosynthesis
- (d) reducing the rate of photosynthesis.

Answer:

- (a) reducing the rate of transpiration

Question 50.

_____ generally have shorter ears and limbs to minimise heat loss.

- (a) Allen's
- (b) Berger's
- (c) Borge's
- (d) Powell's

Answer:

- (a) Allen's

Question 51.

Which of the following statement is correct with regard to Bergmann's rule ?

- (a) Animals of colder area have large size than of hot areas.
- (b) Fish of colder area have large size.
- (c) Birds of colder areas have narrow wings.
- (d) Animals of colder areas possess thick fur.

Answer:

- (a) Animals of colder area have large size than of hot areas.

Question 52.

A behavioural strategy of a daptation called echolocation is found in

- (a) bats
- (b) butterfly
- (c) praying mantis
- (d) arctic tern.

Answer:

- (a) bats

Question 53.

Parameters related to age structure include

- (a) fecundity (birth rate)
- (b) generation time
- (c) death rate
- (d) all of these.

Answer:

- (d) all of these.

Question 54.

Percentage of individuals of a given age group in a given population is called as

- (a) age distribution
- (b) age density
- (c) age graph
- (d) age curve

Answer:

- (a) age distribution

Question 55.

If the age distribution is plotted for a population, the resulting structure is called as

- (a) age graph
- (b) age curve
- (c) age pyramid
- (d) age diagram.

Answer:

- (c) age pyramid

Question 56.

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

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

Answer:

- (a) Emigration

Question 57.

Which of the following factors influence population density under normal conditions ?

- (a) Deaths
- (b) Immigration
- (c) Emigration
- (d) Both (a) and (c)

Answer:

- (a) Deaths

Question 58.

Exponential growth is observed in a population when

- (a) resources in the habitat are unlimited
- (b) each species has the ability to realise its full innate potential
- (c) both (a) and (b)

(d) none of these.

Answer:

(c) both (a) and (b)

Question 59.

Which of the following equations correctly represents the exponential population growth curve ?

(a) $dN/dt = rN$

(b) $dN/dt = rN$

(c) $N_t = N_0 e^{rt}$

(d) Both (a) and (c)

Answer:

(d) Both (a) and (c)

Question 60.

The maximum possible number of individuals that a habitat can support is called its

(a) fecundity

(b) surviving ability

(c) carrying capacity

(d) biotic potential.

Answer:

(c) carrying capacity

Question 61.

Which of the following equations correctly represents Verhulst-Pearl logistic growth ?

(a) $dN/dt = rN$

(b) $dN/dt =$

(c) $dN/dt =$

(d) $dN/dt =$

Answer:

(a) $dN/dt = rN$

Question 62.

The population growth is generally described by the following equation:

What does V 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

Answer:

(b) Intrinsic rate of natural increase

Question 63.

Species interaction with negative influence on both is referred to as

(a) amensalism

(b) mutualism

(c) commensalism

(d) competition.

Answer:
(d) competition.