

The pyramid of numbers is inverted in the case of

- a) parasitic food chain
- b) Grassland ecosystem
- c) Forest ecosystem
- d) lake ecosystem

2. The concept of ecological pyramid was first proposed by

- a) E.P. Odum
- b) A.G. Tansley
- c) Juday
- d) Charles Elton

3. The pyramid of energy in terrestrial ecosystem is

- a) upright
- b) inverted
- c) spindle shaped
- d) irregular

4. Which of the following ecological pyramid is always upright?

- a) Pyramid of energy
- b) Pyramid of number
- c) Pyramid of biomass
- d) none of these

5. The pyramid of numbers in a single tree is

- a) upright
- b) inverted
- c) spindle shaped
- d) none of these

6. A graphic representation of number of individuals of different species belonging to each

trophic level in a an ecosystem is known as

- a) ecological pyramid
- b) pyramid of biomass
- c) pyramid of number
- d) pyramid of energy

7. The pyramid of biomass is inverted in

- a) forest ecosystem
- b) grassland ecosystem
- c) fresh water ecosystem
- d) tundra

8. In pond ecosystem, the pyramid of biomass is

- a) upright
- b) inverted
- c) spindle shaped
- d) none of these

9. In grassland ecosystem, the pyramid of biomass is

- a) upright
- b) inverted
- c) spindle shaped
- d) none of these

10. Which of the following statement is incorrect regarding ecological pyramids

- a) The pyramid of energy is inverted in ocean ecosystem
- b) The pyramid of biomass is inverted in aquatic ecosystem
- c) The pyramid of numbers is upright in grass land ecosystem
- d) The pyramid of biomass is upright in grass land ecosystem

Answers:

1. a) parasitic food chain
2. d) Charles Elton
3. a) upright
4. a) Pyramid of energy
5. c) spindle shaped
6. c) pyramid of number
7. c) fresh water ecosystem
8. b) inverted
9. a) upright
10. a) The pyramid of energy is inverted in ocean ecosystem

1. Ecology deals with the study of:

- a) Living beings
- b) Living and non living components
- c) Reciprocal relationship between living and non living components
- d) Environment

2. Autoecology deals with

- a) Ecology of species
- b) Ecology of many species
- c) Ecology of community
- d) All the above

3. Synecology deals with

- a) Ecology of many species
- b) Ecology of many populations
- c) Ecology of community
- d) None of the above

4. Ecotype is a type of species in which environmentally induced variations are

a) Temporary

b) Genetically fixed

c) Genetically not related

d) None of the above

5. The term 'Biocoenosis' was proposed by

a) Transley

b) Carl Mobius

c) Warming

d) None of the above

6. The pyramid of energy in any ecosystem is

a) Always upright

b) May be upright or inverted

c) Always inverted

d) None of the above

7. Energy flow in ecosystem is

a) Unidirectional

b) Bidirectional

c) Multidirectional

d) None of the above

8. An ecosystem must have continuous external source of

a) minerals

b) energy

c) food

d) All of the above

9. The source of energy in an ecosystem is

a) ATP

b) Sunlight

c) D.N.A

d) R.N.A

10. Trophic levels are formed by

a) Only plants

b) only animals

c) Only carnivorous

d) Organisms linked in food chain

11. Biotic potential is counteracted by

a) Competition with other organisms

b) Producer is the largest

c) Limitation of food supply

d) None of the above

12. Definition of ecosystem is

a) The community of organisms together with the environment in which they live

b) The abiotic component of a habitat

c) The part of the earth and its atmosphere which inhibits living organisms

d) A community of organisms interacting with one another

13. In a food chain of grassland ecosystem the top consumers are

a) Herbivorous

b) Carnivorous

c) Bacteria

d) Either carnivorous or herbivorous

14. MAB stands for

a) Man and biosphere

b) Man, antibiotics and bacteria

- c) Man and biotic community
- d) Mayer, Anderson and Bisby

15. Species that occur in different geographical regions separated by special barrier are:

- a) Allopatric
- b) Sympatric
- c) Sibling
- d) None of the above

Answers:

1-c 2-a 3-c 4-b 5-b

6-a 7-a 8-b 9-b 10-d

11-d 12-a 13-b 14-a 15-a

1. A population is a group of

- a) individuals in a species
- b) species in a community
- c) communities in an ecosystem
- d) individuals in a family

2. What is the most important factor for the success of animal population?

- a) natality
- b) adaptability
- c) unlimited food
- d) inter species activity

3. The formula for exponential population growth is

- a)  $dN/dt = rN$
- b)  $dt/dN = rN$
- c)  $dN/rN = dt$
- d)  $rN/dN = dt$

4. Human population growth curve is a:

- a) S shaped curve
- b) parabola curve
- c) J shaped curve
- d) zig zag curve

5. Exponential growth occurs when there is

- a) a great environmental resistance
- b) no environmental resistance
- c) no biotic potential
- d) a fixed carrying capacity

6. A human population is small, there is a greater chance of :

- a) gene flow
- b) genetic drift
- c) natural selection
- d) mutation

7. In a population, unrestricted reproductive capacity is called as

- a) carrying capacity
- b) biotic potential
- c) birth rate
- d) fertility rate

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

- a) Adam Smith
- b) Charles Darwin
- c) Thomas Malthus
- d) Stuart Mill

9. Two opposite forces operate in the growth and development of every population. One of them is related to the ability to reproduce at a given rate. The force opposite to it is called

- a) fecundity
- b) mortality
- c) environmental resistances
- d) biotic control

10. The carrying capacity of a population is determined by its

- a) population growth rate
- b) natality
- c) mortality
- d) limiting resources

Answers

- 1. a) individuals in a species
  - 2. b) adaptability
  - 3. a)  $dN/dt = rN$
  - 4. c) J shaped curve
  - 5. b) no environmental resistance
  - 6. b) genetic drift
  - 7. c) environmental resistances
  - 8. c) Thomas Malthus
  - 9. b) biotic potential
  - 10. d) limiting resources
1. The pioneers in xerach succession is the
- a) crustose lichen
  - b) mosses
  - c) foliose lichen



d) shrubs

2. The final stable community in an ecological succession is called the

a) final community

b) ultimate community

c) climax community

d) seral community

3. The process of successful establishment of the species in a new area is called

a) sere

b) climax

c) invasion

d) ecesis

4. The order of basic processes involved in succession is

a) Nudation->Invasion-> competition and co action->reaction->stabilization

b) Nudation->stabilization-> competition and co action->Invasion->reaction

c) Invasion-> Nudation->competition and co action->Reaction->stabilization

d) Invasion->stabilization-> competition and co action->Reaction->nudation

5. The formation of a climax community from an abandoned farm land is a an example of

a) Autogenic succession

b) allogenic successsion

c) primary succession

d) secondary succession

6. Succession initiated on large sand deposits or deserts is called

a) hydrosere

b) psammosere

c) xerosere

d) oxylosere

7. The development of a bare area without any life form is called

- a) nudation
- b) ecesis
- c) sere
- d) reaction

8. The conversion of a pond to a climax forest community is an example of

- a) xerarch succession
- b) mesarch succession
- c) hydrarch succession
- d) all of these

9. The intermediate developmental stages in the ecological succession is called

- a) sere
- b) ecesis
- c) climax
- d) nudation

10. All the statements are correct regarding ecological succession except

- a) It is a random process
- b) Species diversity increases as succession proceeds
- c) The food chain relationships becomes more complex
- d) The role of decomposers becomes more and more important

11. The order of succession in a lithosere or xerosere is

- a) Foliose lichen stage->Crustose lichen stage->moss stage->herb stage->shrub stage->forest stage (climax community)
- b) Crustose lichen stage->Foliose lichen stage->moss stage->herb stage->shrub stage->forest stage (climax community)
- c) Moss stage ->Foliose lichen stage-> Crustose lichen stage ->herb stage->shrub stage->forest stage (climax community)

d) Crustose lichen stage->Foliose lichen stage->moss stage-> ->shrub stage-> herb stage  
->forest stage (climax community)

12. The order of succession in a hydrosere is

a) Rooted aquatic plants-> phytoplankton->Free floating stage->Reed swamp stage->Sedge Meadow stage-> wood land stage-> Climax forest

b) Rooted aquatic plants-> phytoplankton->Free floating stage-> Sedge Meadow stage-> Reed swamp stage-> wood land stage-> Climax forest

c) phytoplankton->Rooted aquatic plants->Free floating stage->Reed swamp stage-> wood land stage-> Sedge Meadow stage-> Climax forest

d) phytoplankton->Rooted aquatic plants->Free floating stage->Reed swamp stage->Sedge Meadow stage-> wood land stage-> Climax forest

Answers:

1. a) crustose lichen

2. c) climax community

3. d) ecesis

4. a) Nudation->Invasion-> competition and co action->reaction->stabilization

5. d) secondary succession

6. b) psammosere

7. a) nudation

8. c) hydrarch succession

9. a) sere

10. a) It is a random process

11. b) Crustose lichen stage->Foliose lichen stage->moss stage->herb stage->shrub stage  
->forest stage (climax community)

12. d) phytoplankton->Rooted aquatic plants->Free floating stage->Reed swamp stage->Sedge Meadow stage-> wood land stage-> Climax forest

1. Organisms having the potential for interbreeding and producing fertile offspring is called

a) Class

b) Order

c) Genus

d) Species

2. A group of individuals of a plant or animal species, inhabiting a given area is called

a) Biome

b) Population

c) Ecosystem

d) Community

3. Climate includes

a) Seasonal variation

b) General patterns of atmosphere conditions

c) Average weather of an area

d) All of these

4. The maintenance of relatively constant internal environment is called

a) Homeostasis

b) Exotherms

c) Homeobox

d) Endotherms

5. Ultraviolet radiation which is not lethal but harm to the organism is

a) 0.1 to 0.28  $\mu\text{m}$

b) 0.28-0.32  $\mu\text{m}$

c) 0.32-0.4  $\mu\text{m}$

d) 0.4-0.5  $\mu\text{m}$

6. Ecological niche of an organism represents

a) The resource it utilizes

b) Functional role in the ecological system

c) The range of conditions that it can tolerate

d) all of these

7. Respiratory roots are known as

a) velamen

b) pneumatophores

c) hydathodes

d) prop roots

8. The gradual physiological adjustment to slowly changing new environmental conditions is known as

a) Selection

b) Introduction

c) Acclimatization

d) Quarantine

9. Upper layer of water in a single body of water is known as

a) Hypolimnion

b) Epilimnion

c) thermocline

d) Hydroline

10. The lower limit of water availability in soil is known as

a) field capacity

b) Hypolimnion

c) thermocline

d) wilting point

Answers:

1. d) Species

2. b) Population

3. d) All of these

- 4. a) Homeostasis
- 5. b) 0.28-0.32  $\mu\text{m}$
- 6. d) all of these
- 7. b) pneumatophores
- 8. c) Acclimatization
- 9. b) Epilimnion
- 10. d) wilting point

1. In a pyramid of numbers, in a grassland ecosystem, the largest population is that of

- a) Producers
- b) Tertiary Consumers
- c) Secondary consumers
- d) Herbivores
- e) Primary consumers

2. Which of the following group of gases cause photochemical smog?

- a) Ozone, PAN and CO
- b) HC, NO and PAN
- c) O<sub>2</sub>, PAN, and NO<sub>2</sub>
- d) O<sub>2</sub>, PAN and NO<sub>2</sub> (e) O<sub>3</sub>, PAN and NO<sub>2</sub>

3. Which of the following statements regarding species interdependence are true?

- A) An association of two species where one is benefitted and other remains unaffected called mutualism
  - B) An interspecific association where both partners derive benefit from each other is called commensalism
  - C) A direct food relation between two species of animals in which one animals kills and feed on another is referred as predation
  - D) A relationship between two species of organism where both the partners are benefitted from each other is called symbiosis.
- a) A and B only

b) C and D only

c) A and C only

d) B and C only

e) B and D only

4. The species of plants that play a vital role in controlling the relative abundance of other species in a community are called

a) Edge species

b) Link species

c) Pioneer species

d) Successional species

e) Keystone species

5. Habitat loss and fragmentation, over exploitation, alien species invasion and co extinction are causes for

a) Population exploitation

b) Pollution

c) Migration

d) Ecological succession

e) Biodiversity loss

6. The formula of growth rate for population in given time is

a)  $\frac{dt}{dN} = rN$

b)  $\frac{dt}{rN} = dN$

c)  $\frac{dt}{rN} = dt$

d)  $\frac{dN}{dt} = rN$

e)  $\frac{dN}{rN} = dt$

7. One greenhouse gas contributes 14% to total global warming and another contributes 6%. These are respectively identified as

a) N<sub>2</sub>O and CO<sub>2</sub>

b) CFCs and N<sub>2</sub>O

c) Methane and CO<sub>2</sub>

d) Methane and CFCs

e) CFCs and CO<sub>2</sub>

8. Which of the following is false?

a) Quantity of biomass in a trophic level at a particular period is called as standing crop

b) The energy content in a trophic level is determined is determined by considering a few individuals of a species in that trophic level.

c) The succession that occurs in newly cooled lava is called primary succession

d) Rate of succession is faster in secondary succession

e) phytoplanktons are the pioneers in the aquatic ecosystem

9. Many freshwater animals cannot live for long in sea water and vice versa mainly because of the

a) Change in N levels

b) Change in the levels of thermal tolerance

c) Variations in light intensity

d) Osmotic problems

e) Spectral quality of solar radiation

10. Which of the following regarding ecological pyramids is not correct?

a) In most ecosystems, the pyramid of numbers and biomass are up right

b) In tree dominated ecosystem the pyramid of numbers is inverted

c) The pyramid of energy expresses mainly the rate of food production

d) In deep water ecosystem, the pyramid of biomass is upright

e) The total energy flow at successive tropical level always decreases

Answers

1. a) Producers

2. e) O<sub>3</sub>, PAN and NO<sub>2</sub>



- 3. b) C and D only
- 4. e) Keystone species
- 5. e) Biodiversity loss
- 6. d)  $dN/dt=rN$
- 7. b) CFCs and N<sub>2</sub>O
- 8. b) The energy content in a trophic level is determined is determined by considering a few individuals of a species in that trophic level.
- 9. d) Osmotic problems
- 10. a) In most ecosystems, the pyramid of numbers and biomass are up right

1. Which one is true?

- a) symbiosis when neither population affects each other
- b) symbiosis when the interaction is useful to both the populations
- c) commensalism when none of the interacting populations affect each other
- d) commensalism when the interaction is useful to both the populations

2. 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

3. Barnacles growing on the back of whale is an example for

- a) mutualism
- b) parasitism
- c) amensalism
- d) commensalism

4. Pencillium does not swallow the growth of bacterium Staphylococcus. This sort of relationship is called

- a) commensalism

b) predation

c) amensalism

d) mutualism

5. Symbiosis is shown by

a) E.coli

b) Cuscuta

c) Rafflesia

d) Monotropa

6. When both partners are affected negatively the nature of interaction is

a) commensalism

b) competition

c) predation

d) amensalism

7. An association between two individuals or populations where both are benefitted and where neither can survive without the other is

a) competition

b) commensalism

c) mutualism

d) protocoperation

8. Which of the following interactions will not promote co evolution?

a) commensalism

b) mutualism

c) parasitism

d) interspecific competition

9. The effect of interspecific competition on niches is to make them

a) larger

- b) smaller
- c) more triangular
- d) change location

10. Mycorrhiza represents

- a) symbiotic association between a fungus and liverworts
- b) parasitic association between a fungus and an alga
- c) parasitic association between a fungus and roots of plants
- d) symbiotic association between a fungus and roots of higher plants

Answers

- 1. b) symbiosis when the interaction is useful to both the populations
  - 2. b) Intraspecific competition
  - 3. d) commensalism
  - 4. c) amensalism
  - 5. a) E.coli
  - 6. b) competition
  - 7. c) mutualism
  - 8. a) commensalism
  - 9. b) smaller
  - 10. d) symbiotic association between a fungus and roots of higher plants
1. What is true of ecosystem?
- a) Primary consumers are least dependent upon producers
  - b) Primary consumers out number producers
  - c) Producers are more than primary consumers
  - d) Secondary consumers are the largest and most powerful
2. In an ecosystem , which one shows one way passage
- a) Nitrogen

- b) Carbon
  - c) Potassium
  - d) Free energy
3. Upper part of sea/ aquatic ecosystem contains
- a) Plankton
  - b) Nekton
  - c) Benthos
  - d) Plankton and Nekton
4. Pyramid of numbers in a grassland/ tree ecosystem is
- a) Always inverted
  - b) Always upright
  - c) Both a) and b)
  - d) Spindle shaped
5. Food chain in which microorganisms breakdown the food formed by primary producers is
- a) Parasitic food chain
  - b) Detritus food chain
  - c) Consumer food chain
  - d) Predator food chain
6. Pick up the correct food chain
- a) grass-> chameleon-> insect-> bird
  - b) grass-> fox-> rabbit-> bird
  - c) phytoplankton-> zooplankton-> fish
  - d) Fallen leaves -> bacteria-> insect larvae
7. Association of animals when both partners are benefitted
- a) colony
  - b) Mutualism

c) Commensalism

d) Ammensalism

8. Pyramid of numbers deals with the number of

a) Species in area

b) Subspecies in a community

c) Individuals in a community

d) Individuals in a trophic level

9. The sum total of the populations of the same kind of organisms constitute

a) colony

b) Genus

c) Species

d) Community

10. The dominant second trophic level, in a lake ecosystem, is

a) Benthos

b) Plankton

c) Zooplankton

d) Phytoplankton

Answers

1. c) Producers are more than primary consumers

2. d) Free energy

3. a) Plankton

4. b) Always upright

5. b) Detritus food chain

6. c) phytoplankton-> zooplankton-> fish

7. b) Mutualism

8. d) Individuals in a trophic level

9. c) Species

10. c) Zooplankton