BIOLOGY

NEET & AIIMS

ORGANISMS AND POPULATIONS

Example

1. Mention the two components included in the habitat.

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2. Which biome is characterised by maximum rainfall ?

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3. On the basis of temperature tolerance organisms are classified into two categories. Amongst these majority of organisms belong to which category ?

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4. What is the importance of light for animals ?

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5. What type of perennating structures are produced by lower plants to overcome adverse environmental conditions ?

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6. Organisms can show morphological , physiological and behavioural adaptations. By which of these adaptation altitude sickness is overcome ?

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7. Mention the parameter used for finding population density of banyan tree.

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8. Which factor contribues significantly to population growth in a newly colonised habitat ?

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9. Which features of endoparasites shows simplification ?

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10. Five closely related species of warbles can survive on a same tree. This explains which aspect of competition ?

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Try Yourself

1. _____ is a process through which , over a long period of time, the organisms evolved adaptions to optimise its survival and reproduction in its habitat.

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2. Communities involve interaction of organisms of _____ species in a particular habitat.

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3. Ecology at organisms level is essentially _____ ecology which tries to understand adaptations of organisms with their environment

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4. Organisms can also exist in boiling thermal springs and deep-sea hydrothermal vents where average temperatures exceed $100^{\circ} C$ (True/False)

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5. Aquatic organisms should not face any water-related problem. (True/False)

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6. Organisms which have a wide range of salinty to leracnce are called as _____.

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7. In _____ environment the sediment characteristics often detemine the type of benthic animals.

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8. Heat loss or heat gain is a function of surface area Very _____ animals are rarely found in polar regions.

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9. _____ are able to maintain homeostasis which ensures a constant internal environment of the body.

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10. The kangaroo rat in North American deserts is capable of meeting all its water requirements through its internal fat oxidation (True/False)

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11. In most animals all physiological functions proceed optimally in a wide temperature range (True/False)

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12. Mortality and _____ contribute to a decrease in population density.

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13. Intrinsic rate of natural increase (r) is a very important parameter chosen for assessing impacts of any biotic or abiotic factor on population growth . The value for the Norway rat is _____

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14. In both commensalism and amensal only one species benefits and the interaction is detrimental to the other species. (True/false)

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15. The monarch butterfly is able to protect itself from its predators because of the presence of a poisonous chemical in its body (True/False)

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16. The life cycles of parasites are often complex , involving one or two intermediate hosts or vectors to facilitate parasitisation of its primary hosts. (True/False)

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Exercise

1. Select the incorrect statement (w.r.t. Ecological niche)

A. It represents functional role and status of a species in the environment .

B. It does not represent trophic position of a species.

C. No two species can have the same niche if they are found in the same environment.

D. It is a component of habitat which is governed by functioning of an organism.

Answer: B

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2. In which of the following biome maximum number of plants and animals are found?

A. Desert

B. Tropical deciduous forest

C. Coastal

D. Tundra

Answer: D

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3. Next to temperature _____ is the most important factor influencing the life of organisms.

A. Wind

B. Soil

C. Water

D. Light

Answer: C

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4. A majority of organisms which are restricted to a narrow range of temperature are called as:

A. Euryhaline

B. Stenothermal

C. Eurythermal

D. Stenohaline

Answer: B

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5. Mark the correct match

A. Tuna fish-tropical ocean

B. Mango-Tropical and arctic tree

C. Snow leopard-polar animal

D. Both (1) & (3)

Answer: D

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

A. < 5

B. $30 - 35$

C. > 100

D. 43595

Answer: B

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7. Shallow water region present on the edge of lake is called as

A. Limnetic zone

B. Littoral zone

C. Profundal zone

D. Disphotic zone

Answer: B

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8. Many species of small plants like _____ growing in forests are adapted to photosynthesize optimally under very low light condition.

A. Tree and shrubs

B. Herb and shrubs

C. Tree and herbs

D. Herbs only

Answer: B

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9. Various characteristics of soil such as composition , grain size and aggregation determine the

A. water holding capacity of soil

B. Percolation

C. Temperature

D. More than one option is correct

Answer: D

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10. Soil best suited for plant growth is

A. Loam soil

B. Clay soil

C. Sandy soil

D. All are correct

Answer: A

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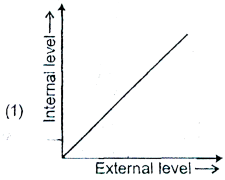
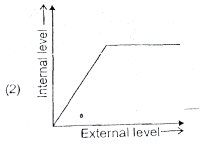
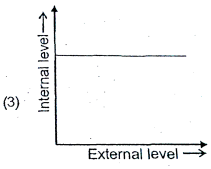
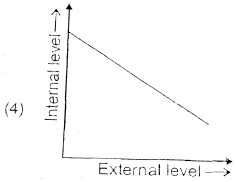
11. Find out the correct diagrammatic representation of organismic response w.r.t. Regulators

A. 

B. 

C. 

D. 

Answer: C

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12. The stage of suspended development shown by zooplanktons is called:

A. Hibernation

B. Diapause

C. Aestivation

D. Migration

Answer: B

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13. Which of the following organism is capable of meeting its water requirement through internal oxidation of fats ?

A. Desert lizard

B. Antarctic fish

C. Kangaroo rat

D. Seal

Answer: C

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14. The per individual change in a population due to natality can be estimated by using (Here, ΔN_n) =New individuals , N=initial populations , Δt=change in time)

A. $\frac{N\delta t}{\Delta N_n}$

B. $\frac{N\Delta N_n}{t}$

C. $\frac{\Delta N_n \Delta t}{N}$

D. $\frac{\Delta N_n}{N\Delta t}$

Answer: D

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15. Vital index of a population is represented as

A. $\frac{\text{Natality}}{\text{Mortality}} \times 100$

B. (Natality-Mortality) $\times 100$

C. $\frac{\text{Mortality}}{\text{Natality}} \times 100$

D. $\frac{\text{Natality}}{100 \times \text{Mortality}}$

Answer: A

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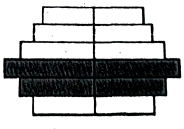
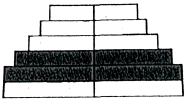
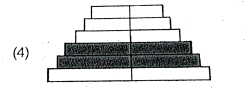
16. Which of the given age pyramid reflects a stable human population ?

A. (1) 

B. (2) 

C. (3) 

D. 

Answer: C

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17. Which of the following pairs contributes to an increase in population ?

A. Emigration and natality

B. Natality and immigration

C. Mortality and emigration

D. Immigration and mortality

Answer: B

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18. The maximum number of individuals of a population which can be supported with optimum resources for their survival is called

A. Biotic potential

B. Carrying capacity

C. Environmental resistance

D. Potential natality

Answer: B

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19. The integral form of exponential growth equation will be

A. $N_0 = N_t e^{rt}$

B. $N_t - N_o = e^{rt}$

C. $N_t = N_o e^{rt}$

D. $\frac{N_t}{N_o} = \frac{1}{e^{rt}}$

Answer: C

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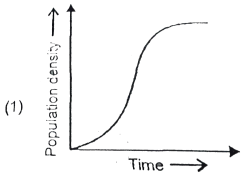
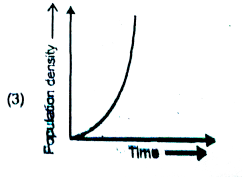
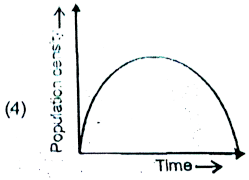
20. Which of the following curve represents Verhulst Pearl Logistic growth in a populations ?

A. 

B. 

C. 

D. 

Answer: A

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21. Mark the incorrect match (w.r.t. population interactions)

A. Amensalism :-,0

B. Prediation: +,-

C. Commensalism : +,+

D. Parasitism +,-

Answer: C

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22. According to Gause, if two species are occupying same ecological niche and competing for common resources, then

A. Both species will eliminate each other

B. Interior type will eliminate the superior type of species

C. Superior species will exclude the inferior type of species

D. Both species will remain unaffected

Answer: C

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23. Which of the following is a conduit for energy transfer across trophic levels ?

A. Mutualism

B. Protocooperation

C. parasitism

D. Predation

Answer: D

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24. Find the correct option (w.r.t. predation)

A. VAM

B. Lichen

C. Yucca-Pronuba

D. Opuntia and Cochineal insect

Answer: D

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25. Association of cattle egret and grazing cattle represents

A. Commensalism

B. Protocooperation

C. Mutualism

D. Amensalism

Answer: A

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26. Phenomenon of inhibition of growth of one species by other species through secretion of certain chemicals is termed as

A. Commensalism

B. Allelopathy

C. Mutualism

D. Predation

Answer: B

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27. find the odd one w.r.t. parasitism

A. Cuscuta

B. Liver fluke

C. Female mosquito

D. Plasmodium

Answer: C

28. Sexual deceit' is employed by

A. Figs

B. Orchid

C. Yucca

D. Pinus

Answer: B

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29. Predation performs all, except

A. Transfer of energy

B. Keeps prey populations under control

C. Loss of sence organs

D. maintains species diversity

Answer: C

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30. Cuckoo and crow are examples of

A. Competition

B. Ectoparasites

C. Brood parasitism

D. Predation

Answer: C

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Assignment Section A Objective Type Questions

1. A population is

A. A group of organisms of one species occupying a defined area

B. A group of organisms of different species occupying a defined area

C. A grou of organisms of different species occupying different geographical area

D. A group of sexually isolated organisms occupyig a defined area

Answer: A

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2. Which is the correct under of ecological hierachy ?

A. Biome $\rightarrow$ Populations $\rightarrow$ Community $\rightarrow$ Organism

B. Organism $\rightarrow$ Biome $\rightarrow$ Population $\rightarrow$ Community

C. Population $\rightarrow$ Community $\rightarrow$ Biome $\rightarrow$ Organism

D. Organism $\rightarrow$ Population $\rightarrow$ Community $\rightarrow$ Biome

Answer: D

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3. Father of Indian ecology is

A. H. Reiter

B. G.S. Puri

C. R. Misra

D. Hutchinson

Answer: C

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4. Ecology describes

A. Interactions between living organism only

B. Interactions between members of a single species only

C. Interactions of organisms among thermselves as well as with their surrounding abiotic components

D. Intraspectic competitions only

Answer: C

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5. Members of a population

A. Can interbreed and produce fertile offsprings

B. Share a common gene pool

C. Share or compete for similar resoruces

D. More than one option is correct

Answer: D

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6. Ecology is basically concerned with how many basic levels of organisation ?

A. Three

B. Two

C. Four

D. Eight

Answer: C

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7. Ecological equivalents meant for

A. Two similar ecological niche in same geographical location

B. Two similar ecological niche in two different geographical locations

C. Organisms that similar ecological niche in different geographical locations

D. Organisms tha occypy different ecological niche in different geographical locations

Answer: C

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8. Factors which play significant role in the formation of major biomes are

A. Temperature only

B. Temperature and precipitation

C. Precipitation and wind

D. Precipitation and atmosphere

Answer: B

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9. Permafrost condition is characteristic feature of

A. Hot desert biome

B. Cold desert biome

C. Savanna biome

D. Chaparral biome

Answer: B

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10. Find out the incorrect match

A. Topographic factors-Soil texture

B. Edaphic factors-Soi factors

C. Climate factors-Wind, humidity

D. Physiographic factors-Mountain slope

Answer: A

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11. Choose odd one w.r.t. features of tropical rain forest

A. Permafrost

B. Drip tips

C. Epiphytes

D. Woody climber

Answer: A

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12. The organism found in boiling thermal springs are

A. Fungi

B. Protists

C. Archaebacteria

D. Actinomycetes

Answer: C

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13. Which of the following is most ecologically relevant factors ?

A. Precipitation

B. Temperature

C. Soil

D. Wind

Answer: B

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14. A habitat is constitued by

A. Predators and pathogens

B. Abiotic and biotic factors

C. Climate and edaphic factors

D. Topographic, climate and edaphic factors

Answer: B

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15. A kind of similarity found in polar regions and high altitude is

A. High temperature, low precipitation and deciduous forest

B. Low temperature, snowfall, scanty or no vegetatition

C. Moderate rainfall, high temperature , no vegetation

D. High humidity high rainfall, low temperature

Answer: B

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16. Mango, tuna fish , snow leopards are

A. Euryhaline

B. Stenothermal

C. Eurythermal

D. Eurythermal & eurtyhaline

Answer: B

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17. Find out the correct match w.r.t. salinity (in parts per thousand)

A. In land water = > 5

B. Sea water =60-65

C. Hyper saline logoons = > 100

D. Fresh water $= > 3$

Answer: C

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18. Match Column I with Column II and choose correct option

	Coloumn I (Means of transport)	Column II (Soil type)
a.	Water	(i) Colluvial
b.	Air	(ii) Alluvial
c.	Gravity	(iii) Eolian

A. a(i),b(ii),c(iii)

B. a(i),b(iii),c(ii)

C. a(i),b(iii),c(i)

D. a(iii),b(i),c(ii)

Answer: C

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19. Two most important factors influencing the life of organisms are

A. soil, temperature

B. Light, water

C. Water, temperature

D. Soil, light

Answer: C

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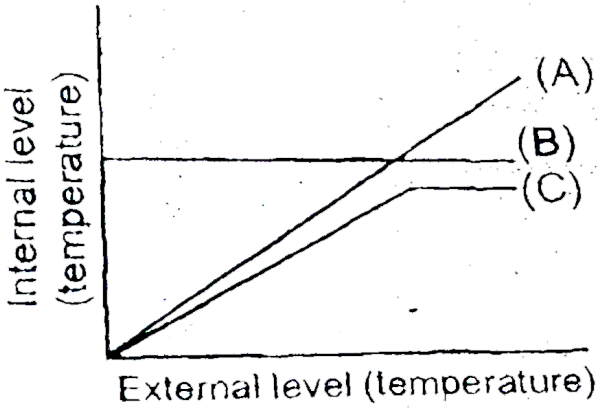
20. Below is the diagramatic represetation of response of organisms against temperature . Find out

the correct match



A. A-plants , B-birds

B. A-birds, B-mammals

C. C-mammals, B-plants

D. A-birds, B-plants

Answer: A

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21. Smaller animals tend to lose body heat very fast as compared to larger animals because they have

A. Higher surface to volume ratio

B. Lower surface to volume ratio

C. Equal values of surface and volume

D. Very low BMR (basal metabolic rate)

Answer: A

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22. Match Column I with Column II and choose correct option

Column I	Column II
a. Aestivation	(i) Over wintering
b. Hibernation	(ii) Over summer
c. Diapause	(iii) Suspended development in zooplanktons

A. a(i),b(ii),c(iii)

B. a(i),b(iii),c(ii)

C. a(ii),b(i),c(iii)

D. a(iii),b(i),c(ii)

Answer: C

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23. Thick cuticle, sunken and scotoactive stomata, CAM photosynthesis and conversion of leaves into spines are some of the important characters of

A. Desert plants

B. Hydrophytes

C. Xerophytes

D. More than one option is correct

Answer: D

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24. Warm blooded animals like mammals from colder climates generally have shorter ear and limbs . This is an explanation of

A. Jordan's rule

B. Allen's rule

C. Rensch's rule

D. Bergman's rule

Answer: B

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25. Natural selection operates at

A. Organismal level

B. Population level

C. Community level

D. Ecosystem level

Answer: B

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26. Find odd one w.r.t population

A. Natality

B. Death rate

C. Age pyramid

D. Births

Answer: C

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27. Which of the following contributes an increase in population density ?

A. Mortality

B. Emigration

C. Natality

D. Predation

Answer: C

28. Which of the following is considered as more realistic growth model ?

A. Exponential growth

B. Arithmetic growth

C. Geometric growth

D. Logistic growth

Answer: D

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29. In nature habitat has enough resources to support a maximum possible, number, beyond which no further growth is possible, This characteristic feature of nature is known as

A. Biotic potential

B. Carrying capacity

C. Natural selection

D. Homeostasis

Answer: B

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30. Predator play important role in

A. Conduction of energy across trophic levels

B. Maintainance of species diversity

C. Control of pry population

D. More than one option is correct

Answer: D

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31. Resource partitioning ' is an important mechanism which promotes

A. Competitive release

B. Co-existence

C. Competitive exclusion

D. Antibiosis

Answer: B

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32. a. Loss of unnecessary sense organs

b. Pressence of adhesive organs

c. Presence of suckers

d. High reproductive capacity

e. well developed digestive system

Choose correct optioin w.r.t. parasites

A. All a-e are correct

B. Only, a, b, d & e are correct

C. Only a, b,c,d are correct

D. Only d & e are incorrect

Answer: C

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33. Select the incorrect match w.r.t interspecific interaction

A.

Species A	Species B	Interaction
+	+	Mutualism

B.

Species A	Species B	Interaction
+	−	Parasitism

C.

Species A	Species B	Interaction
+	+	Commensalism

D.

Species A	Species B	Interaction
+	−	Predation

Answer: C

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34. Coamouflage is an important mechanism where

A. Predators are never cryptically coloured for easy capturing of their prey

B. Prey species are crytically coloured to avoid being detected easily by the predator

C. Prey prduces are cryptically poisonous chemicals in their sorroundings to protect themselves from predators

D. Predators evolved some physiological adaptations to reach to the prey present in some harsh habitats

Answer: B

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35. A J-shaped growth curve depicts

A. Exponential growth when conditions are limited

B. Exponential growth when conditions are unlimited

C. Logistic growth when conditions are limited

D. Logistic growt when conditions are unlimited

Answer: B

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Assignment Section B Objective Type Questions

1. Which of the following statement is correct ?

A. Two species within a given community can have exactly the same niche

B. Two species within a given community cannot have exactly the same niche

C. Two species ca live permanently togetherr

D. Both (2) & (3)

Answer: D

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2. Organisms occupying similar ecological niche but different geographical areas of distribution are called as

A. Edge species

B. Ecological equivalents

C. Ecocolines

D. Inquilines

Answer: B

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3. The taiga region is also known as

A. Deciduous forest

B. Tropical rain forest

C. Northern conifer forest

D. Torpical savannah

Answer: C

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4. Read the following statement w.r.t. features of biomes and select the correct option for tropical rain forests.

a. Buttress roots

b.Vines, lianas, epiphytes are abundant

c.Highly leached soils

d. Soil has high base content

e. 30-40 m tall canopy structure with 2-3 strate only

A. a,b & e

B. b,c & d

C. a,b& c

D. c,d & e

Answer: C

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5. A good soil is that which

A. Has very high water holding capacity

B. Has moderate water holding capacity

C. Has very low water holding capacity

D. Allows water to pass through it quickly

Answer: B

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6. Soil porosity is the maximum in

A. Sandy soil

B. Clay soil

C. Silt

D. Loam

Answer: B

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7. Rise in the temperature and air humidity can be observed from

A. Equator towards polar region

B. Poles to equator region during latitudinal transition

C. Plains to mountain top during altitudinal movement

D. More than one option is correct

Answer: B

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8. Match Column I with Column II and choose correct option

	Column I (Depth of sea water)		Column II (Algae type)
a	Shallowest depth	(i)	Borwn algae
$b.$	Intermediate depth	(ii)	Green algae
$c.$	Greatest depth	(iii)	Red algae

A. a(i),b(ii),c(iii)

B. a(i),b(iii),c(ii)

C. a(ii),b(i),c(iii)

D. a(ii),b(iii),c(i)

Answer: C

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9. A process which maintains constancy of internal body environment of organisms despite varying external environment conditions is called as

A. Homeostasis

B. Epistasis

C. Heterosis

D. Antibiosis

Answer: A

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10. Nearly all plants and an overwhelming majority (99 percent) of animals are categorised as)

A. Conformers-They can maintain a constant internal environment

B. Conformers-They cannot maintain a contant internal environment

C. Regulations -They can maintain a constant internal environment

D. Regulations -They cannot maintain a constant internal environment

Answer: B

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11. Keolado national park is situated at _____ and is famous for _____ .

A. Gir (Gujarat), Lion

B. Ranthambhore (Rajasthan), Tiger

C. Bharatpur (Rajasthan), Siberian cranes

D. Hazaribag (Jharkhand), Tiger

Answer: C

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12. Altitude sickness which includes nausea, fatigue and heart palpitations occurs due to

A. High atmospheric pressure at high altitudes

B. Low atmospheric pressure at high altitude

C. High mountain height and high temperature

D. Heavy snowfall at high altitude and low temperature

Answer: B

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13. Consider the following statement (A-D) each with one or two blanks.

(A) Some snails go into _____(i)_____ to avoid _____(ii)_____ related problems

(B) Since small animals have a _____(iii)_____ surface area relative to their volume, they tend to lose body heat ____(iv)____ when it is cold outside.

(C) Next to temperature , ____(v)____ is the most ecologically important environment factor.

(D) Every ___(vi)____ the famous keolado National Park in Rajasthan host thousands of migrating birds.

Which one of the following option gives the correct fill ups for the respective blank numbers from (i) to (vi) in the statements ?

A. (i) Hibernation , (ii) , Summer , (v) Light

B. (iii) Larger, (iv) Very fast, (v) Water

C. i) Aestivation , (ii) summer(iii) Larger,(iv) Very fast, (v) Water, (vi) Summer

D. (i) Aestivation , (ii) Winter, (v) Light

Answer: C

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14. Select the correct statement w.r.t. adaptations

A. Desert lizards bask in the sun and absorb heat when their body temperature drops below comfort zone

B. To stop experiencing altitude sickness, the body compensates low oxygen availability by increasing binding affinity of haemoglobin

C. Mammals of colder climate generally have larger ears and limbs to minimise heat loss

D. Many desert plants have thin cuticle on their leaf surface and have their stomata arranged on upper surface to minimise water loss.

Answer: A

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15. Select the incorrect statement w.r.t. ecotypes

A. They are different from each other on the basis of morphological and physiological characters

B. They are interfertile

C. They are genetically similar

D. There may be several ecotypes of the same organism

Answer: C

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16. Altitude sickness is managed by the body by

A. Decreasing RBC production

B. Increasing fat oxidation

C. Decreasing binding capacity of hemoglobin

D. Decreasing breathing rate

Answer: C

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17. Select the incorrect statement

A. Organisms living in oceans , lakes and rivers do not face any water related problems

B. Productivity and distribution of plants is dependent on water

C. The levels of thermal tolerance of different species determine to a large extent their geographical distribution

D. Foraging , reproductive and migratory activities of some animals are dependent on seasonal variation in light.

Answer: A

Watch Video Solution

18. A group of individuals living in a particular geographical area at a particular time is called

A. Local population

B. Deme

C. Community

D. Both (1) & (2)

Answer: D

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19. Which of the following statements is not true for J-shaped growth curve?

A. Exponential phase is prolonged

B. Population never grows beyond carrying capacity

C. Population crash occurs

D. Population seldom reaches equilibrium

Answer: B

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20. The interaction between two living organisms of different species which is beneficial to both but is not obligatory because they can live without each other is known as

A. Proto-cooperation

B. Mutualism or symbiosis

C. Commensalim

D. Amensalism

Answer: A

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21. Competition for food, light, and space is most severe between two

A. Distantly related species growing in different habitat.

B. Distantly related species growing in the same habitat.

C. Closely related species growing in different habitat.

D. Closely related species growing in the same area.

Answer: D

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22. Which of the following type of age pyramid reflects a stable population growth ?

A. Triangular

B. Bell-shaped

C. Urn-shaped

D. Both bell-shaped and urn-shaped.

Answer: B

Watch Video Solution

23. Biotic potential is

A. Intrinsic rate of natural increase under environmental limited condition

B. Intrinsic rate of natural increase under environmental unlimited conditions

C. Entrinsic rate of natural increase under environmental limited conditions

D. Entrinsic rate of natural increase under environmental unlimited conditions

Answer: B

Watch Video Solution

24. Cattle or goats are never browsing on calotropis growing in abandoned fields because of the presence of

A. Poisonous glycosides

B. Alkaloids like quinine

C. Opium

D. Long chain fatty acids

Answer: A

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25. Pollination in Ophrys (a mediterranean orchid) occurs by

A. Insect through click mechanism

B. Insect through trap door mechanism

C. Insect through pseudocopulation mechanism

D. Insect through lever mechanism

Answer: C

Watch Video Solution

26. Which of the following is most appropriately defined ?

A. Commensalism is a relationship in which one species is benefitted and the other is neither benefitted nor harmed.

B. Parasite is an organism which always lives inside the body of other organism and may kill it.

C. Competition is defined as a process in which the fitness of one species is significantly higher in the presence of another species.

D. Mutualism is a relationship in which one species is benefitted where as the other is unaffected.

Answer: A

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27. A predator

A. Is too efficient to overexploits its prey

B. Helps in maintaining species diversity by increasing the intensity of competition among prey species.

C. Acts as conduits for energy transfer across trophic levels.

D. Shows (+,+) interaction with its prey

Answer: C

Watch Video Solution

28. Read the following statements and select the correct option w.r.t. population attributes

(a) Population density is necessarily measured in numbers

(b) Tiger census is often based on pug marks and fecal pellets

(c) Biomass is not a meaningful measure to know population size.

(d) Size of a population for any species is not a static parameter

A. a & b

B. a & d

C. c & d

D. a,b & d

Answer: D

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29. Change in population size equation with prolonged exponential phase can be converted into logistic growth equation by multiplying it with

A. K/N

B. $K - N$/K

C. K/K-N

D. 1/N-K

Answer: B

Watch Video Solution

30. Population envolve to maximise their reproductive fitness also called Darwinian fitness with

A. High value

B. Low value

C. High K value

D. High $K - N$/K value

Answer: A

Watch Video Solution

31. Select incorrect statement regarding different population attributes

A. Natural selection operates at population level

B. Size of the population tells a lot about its status in the habitat

C. In age pyramids age distribution of male and females are shown in separate diagrams

D. Population is a group of individuals multiplying by sexual and sexual reproduction

Answer: C

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32. Predation, parasitism and commensalism share a common characteristic i.e,

A. Both the intercting species are benefitted

B. Interating species live closely together

C. One of the species is benefitted while other os harmed

D. Both the species belong to same taxonomic group

Answer: B

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33. Competition is a rivalry between two or more organisms for obtaining the same resources. It is a type of

A. Positive interaction

B. Negative interaction

C. Neither positive nor negative interaction

D. Symbiotic relationship

Answer: B

Watch Video Solution

34. Which of the following is incorrect w.r.t competition ?

A. Resources need not be limiting for competition to occur

B. Competitive species may evolve mechanism that promote their co-existance

C. Connel's field experiment is an example of competitive release

D. Only closely related species can show competition

Answer: D

Watch Video Solution

35. The transition zone between two communities is called

A. Ecocline

B. Ecotone

C. Buffer zone

D. Thermocline

Answer: B

Watch Video Solution

Assignment Section C Previous Years Questions

1. Mycorrhizae are the example of

A. Fungistasis

B. Amensalism

C. Antibiosis

D. Mutualism

Answer: D

Watch Video Solution

2. 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

Watch Video Solution

3. Plants, which produce characteristic pneumatophores and show vivpary belong to

A. Mesophytes

B. Halophytes

C. Psammophytes

D. Hydrophytes

Answer: B

Watch Video Solution

4. 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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5. 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

Watch Video Solution

6. Which of the following is correctly matched?

A. Aerenchyma - Opuntia

B. Age pyramid - Biome

C. Parthenium hysterophorus - Threat to biodiversity

D. Stratification - population

Answer: C

Watch Video Solution

7. 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 death rate is greater than birth rate

B. When N/K is exactly one

C. When N nears the carrying capacity of the habitat

D. When N/K equals zero

Answer: B

Watch Video Solution

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

A. Population

B. Ecological niche

C. Biotic community

D. Ecosystem

Answer: C

Watch Video Solution

9. Roots play insignificant role in absorption of water in

A. Wheat

B. Sunflower

C. Pistia

D. Pea

Answer: C

 Watch Video Solution

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

A. Mutualism

B. Competition

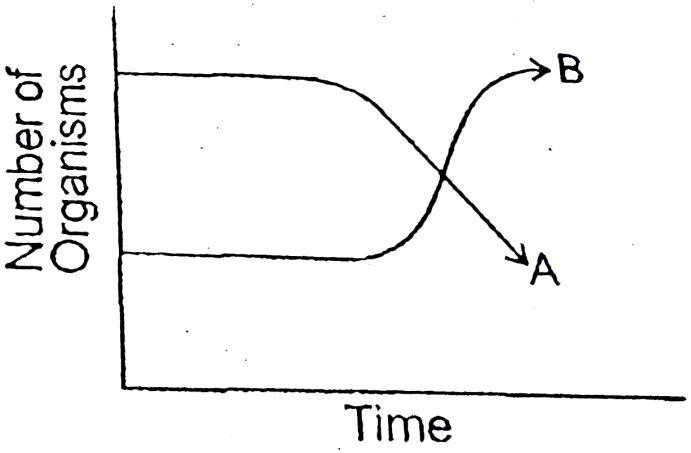
C. Predation

D. Parasitism

Answer: B

Watch Video Solution

11. The following graph depicts changes in two populations (A and B) of herbivores in a grassy field. A possible reason for these changes is that



A. Population A consumed the members of population B

B. Both plant populations in this habitat decreased

C. Population B competed more successfully for food than population A

D. Population A produced more offspring than population B

Answer: C

Watch Video Solution

12. Most animals are tree dwellers in a :

A. Tropical rain forest

B. Coniferous forest

C. Thorn woodland

D. Temperate deciduous forest

Answer: A

Watch Video Solution

13. Just as a person moving from Delhi to Shimla to escape the heat for the duration of hot summer, thousands of migratory birds from Siberia and other extremely cold northern regions move to:

A. Western Ghat

B. Meghalaya

C. Corbett National Park

D. Keoladeo National Park

Answer: D

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

A. Symbiosis

B. Commensalism

C. Amensalism

D. Ectoparasitism

Answer: A

15. 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. 15

B. 5

C. Zero

D. 10

Answer: C

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16. Cuscuta is an example of

A. Ectoparasitism

B. Brood parasitism

C. Predation

D. Endoparasitism

Answer: A

Watch Video Solution

17. People who have migrated from the planes to an area adjoining Rohtang pass about six months back

A. Have the usual RBC count but their haemoglobin has very high binding affinity to O_2

B. Have more RBCs and their haemoglobin has a lower binding affinity of O_2

C. Are not physically fit to play games like football

D. Suffer from altitude sickness with symptoms like naussea , fatigue etc.

Answer: B

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18. The logistic population growth is expressed by the equation

A. $dN/dt = rN$

B. $dN/dt = rN\left(\frac{N-K}{N}\right)$

C. $dt/dN = Nr\left(\frac{K-N}{K}\right)$

D. $dN/dt = rN\left(\frac{K-N}{K}\right)$

Answer: D

Watch Video Solution

19. Large woody vines are more commonly found in

A. Alpine forests

B. Temperate forests

C. Mangroves

D. Tropical rainforests

Answer: D

Watch Video Solution

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

A. The cuckoo (Koel) lays its eggs in crow's nest

B. The female Anopheles bites and sucks blood from human

C. Human foetus developing inside the uterus draw nourishment from the mother

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

Answer: D

Watch Video Solution

21. 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. (a),(b)

B. (c),(d)

C. (a),(c)

D. (b),(d)

Answer: C

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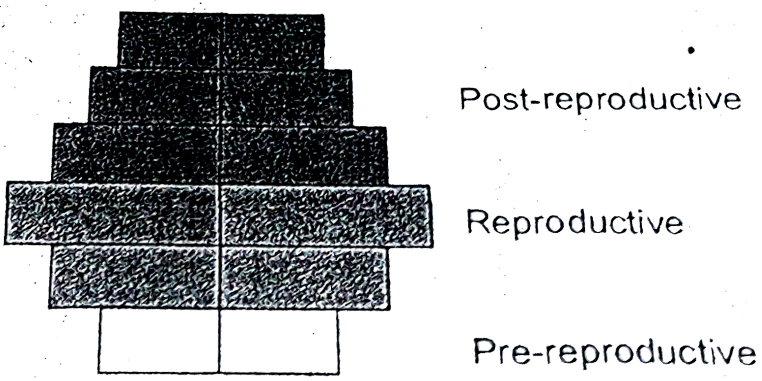
22. What type of human population represented by the following age pyramid ?



A. Expanding population

B. Vanishing population

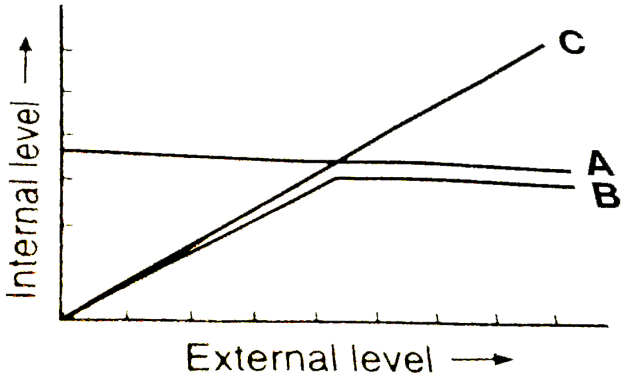
C. Stable population

D. Declining population

Answer: D

Watch Video Solution

23. The figure given below is a diagrammatic representation of response of organisms to abiotic factors. What do A, B and C represent respectively?



A.

$$\begin{pmatrix} a \\ b \\ c \end{pmatrix}, (\text{Conformer, Regulator, Partial regulator})$$

B.

$$\begin{pmatrix} a \\ b \\ c \end{pmatrix}, (\text{Regulator, Partial regulator, Conformer})$$

C.

$$\begin{pmatrix} a \\ b \\ c \end{pmatrix}, (\text{Partial regulator}, \text{Regulator}, \text{Conformer})$$

D.

$$\begin{pmatrix} a \\ b \\ c \end{pmatrix}, (\text{Regulator}, \text{Conformer}, \text{Partial regulator})$$

Answer: D

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24. Which one of the following is most appropriately defined?

A. Host is an organism which provides food to another organims

B. Amensalism is a relationship in which one species is benefitted whereas the other is unaffected

C. Predator is an organism that catches and kills other organism for food

D. Parasite is an organism which always lives inside the body organism and may kill it

Answer: C

 Watch Video Solution

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

A. Sex - ratio

B. Stratrification

C. Natality

D. Morality

Answer: B

Watch Video Solution

26. Study the four statement (i-iv) given below and select the two correct ones out of them

(i) A lion eating a deer and a sparrow feeding or grains are ecologically similar in being consumers.

(ii) Predator star fish Pisaster helps in maintaining species diversity of some invertebrates

(iii) Predators ultimately lead to the extinction of prey species

(iv) Production of chemicals such as nicotine, strychnine by the plants are metabolic disorders

The two correct statements are

A. (a) and (b)

B. (b) and (c)

C. (c) and (d)

D. (a) and (d)

Answer: A

27. What is true about the isolated small tribal populations ?

A. There is no change in population size as they have a large gene pool

B. There is a decline in population as boys marry girls only from their own tribe

C. Hereditary diseases like color blindness do not spread in the isolated population

D. Wrestlers who develop strong body muscles in their life time pass this character on to their progeny

Answer: B

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28. Quercus species is the dominant component in

A. Tropical rain forests

B. Temperate deciduous forests

C. Alpine forests

D. Scrub forests

Answer: B

Watch Video Solution

29. 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. a and b

B. c and d

C. b and c

D. c and a

Answer: B

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30. 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. A skewed curve

B. A normal distribution

C. A bi-modal distribution

D. A T-shaped curve

Answer: B

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

A. The population if its predators increases enormously

B. S-shaped or sigmoid growth of this insect.

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

D. Its population growth curve is of j-type.

Answer: D

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

A. Ecosystem

B. Biotic community

C. Population

D. Landscape

Answer: C

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

A. Predation on one another

B. Mutualism

C. Intra specific competition

D. Inter specific competition

Answer: C

Watch Video Solution

34. Niche overlap indicates

A. Active co-operation between two species

B. Two different parasites on the same host

C. Sharing of oe or more resources between the two species

D. Mutualism between two species

Answer: C

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35. Annual migration does not occur in the case of

A. Salmon

B. Siberian crane

C. Salamander

D. Arctic tern

Answer: C

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36. 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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37. There exists a close associatin between the algae and the fungus within a lichen. The fungus

A. Fixes the atmospheric nitrogen for the alga

B. Provides protection, anchorage and absorption for the alga

C. Provides food for the alga

D. Releases oxygen for the alga

Answer: B

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38. 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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39. 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 chameleon

Answer: C

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40. At which latitude, heat gain through insolation approximately equals heat loss through terrestrial radiation -

A. 66° North and South

B. $22\frac{1}{(2)^\circ}$ North and South

C. 40° North and South

D. $42\frac{1}{(2)^\circ}$ North and South

Answer: C

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41. The basic unit of study in Ecology is

A. Population A consumed the members of population B

B. Organism

C. Community

D. Species

Answer: B

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42. Niche of a species is

A. Habitat and specific functions of a species

B. Specific place where an organism lives

C. Specific species function and its competitive power

D. None of these

Answer: A

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

A. Shrub land

B. Forest

C. Desert

D. Grassland

Answer: C

Watch Video Solution

44. The abundance of a species population within its habitat is called

A. Relative density

B. Regional density

C. Absolute density

D. Niche density

Answer: D

Watch Video Solution

45. Tropical plants Prosopis, Acacia and Cappar is belong to

A. Deciduous forest

B. Evergreen forests

C. Grass lands

D. Thorn forests

Answer: D

Watch Video Solution

46. What is true for individuals of same species?

A. Live in same niche

B. Live in same habitat

C. Interbreeding

D. Live in different habitat

Answer: C

Watch Video Solution

47. Consider the following statements (a-d) each with one or two blanks:

(a) Bears go into (1) during winter to (2) cold weather.

(b) A conical age pyramid with a broad base represent (3) human population.

(c) A wasp pollinating a fig flower is an example of (4).

(d) An area with high levels of species richness is known as (5) .

Find the correct fill up words.

A. (3)-Expanding -(4)-commensalism. (5)-biodiversity park

B. (1)-hibernation, (2)-escape, (3)-expanding , (5)-hot spot

C. (3)-stable, (4)-commesalism, (5)-marsh

D. (1)-aestivatiion , (2)-escape , (3)-stable, (4)-mutualism

Answer: B

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48. Which one of the following pairs is correctly matched ?

A. Parasitism-intra-specific relationship

B. Uricotelism -aquatic habitat

C. Excessive perspiration-xeric adaption

D. Stream lined body-aquatic adaptation.

Answer: D

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49. More than 70% of world's fresh water is contained in

A. Polar ice

B. Glaciers and mountains

C. Antartica

D. Greenland

Answer: A

Watch Video Solution

50. Which of the following are likely to be present in deep sea water?

A. Eubacteria

B. Blue-greeen algae

C. Saprophytic fungi

D. Archaebacteria

Answer: D

Watch Video Solution

51. Benthic organism are affected the most by

A. Water-holding capacity of soil

B. Light reaching the forest floor

C. Light reaching the forest floor

D. Surface turbulence of water

Answer: D

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52. Which one of the following is not a parasitic adaptation?

A. Loss of unnecessary sense organs

B. Development of adhesive organs

C. Loss of digestive organs

D. Loss of reproductive capacity

Answer: D

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53. In a lake , phytoplankton grow in abundance in

A. Littoral zone

B. Limnetic zone

C. Profundal zone

D. Benthic region

Answer: B

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54. Littoral zone is located along the:

A. High mountain

B. Sea

C. Forests

D. Desert

Answer: B

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55. The age pyramid with broad base indicates

A. High percentage of young individuals

B. High percentage of old individuals

C. Low percentage of young individuals

D. A stable population

Answer: A

Watch Video Solution

56. A population growing in a habitat with limited resources shows four phases of growth in the following sequence:

A. Acceleration-deceleration-lag phase-asymptote

B. Asymptote-acceleration-deceleration -lag phase

C. Lag phase-acccceleration-deceleration - asymptote

D. Acceleration -lag phase-deceleration -asymptote

Answer: C

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57. Sigmoid/logistic growth curve is represented by

A. $dN/dt=rN$

B. $dN/dt=rN(1-N/K)$

C. $Nt=No+B+I-D-E$

D. $dN/dt=1-N/K$

Answer: B

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58. Two opposite forces operating in growth and development of every population. One of them has

ability to reproduce at a given rate. The opposing force is

A. Fecundity

B. Environmental resistance

C. Biotic control

D. Mortality

Answer: B

Watch Video Solution

59. The growth curve of bacterial population is lab is plotted against time. What will be the shape of graph

?

A. Sigmoid

B. Hyperbolic

C. Ascending straight line

D. J-shaped

Answer: D

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60. Certain characteristic demographic features of developing countries are

A. High fertility, low or rapidly falling mortality rate, rapid population growth and a very yound age distributioin.

B. High fertility, high density , rapidly rising mortality rate and a very yound age of distribution

C. High infant mortality , low fertility , uneven population growth and a very young age distribution

D. High mortality , high density , uneven population growth and a very old age distribution

Answer: A

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61. Praying mantis is a good example of :

A. Camouflage

B. Mullerian mimicry

C. warning colouration

D. Social insects

Answer: A

Watch Video Solution

62. Which type of association is found in between entompophilour flower and pollinating agent ?

A. Amensalism

B. Commensalism

C. Cooperation

D. Co-evolution

Answer: D

Watch Video Solution

63. In a population, unrestricted reproductive capacity is called as -

A. Biotic potential

B. Fertility

C. Carrying capacity

D. Birth rate

Answer: A

Watch Video Solution

64. 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 organization and survival

B. A common species that has plenty of biomass, yet has a fairly low impact on the community's organizatiion

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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65. In which one of the following pairs is the specific characteristic of a soil not correctly matched ?

A. Laterite -Contains aluminium compound

B. Terra rosa-Most suitable for roses

C. Chernozems-Richest soil in the world

D. Blank soil-Rich in calcium carbonate

Answer: D

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66. According of Darwin, the organic evolution is due to

A. Interspecific competition

B. Competition within closely related species

C. Reduced feeding efficiency in one species due to the presence of interfering species

D. Intraspecific competition

Answer: A

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Assignment Section D Assertion Reason Type Questions

1. A: Holistic approach explains the environmental interactions.

R: All environmental factors are integrated with no limits of time and space

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

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2. Assertion: Some orgainsms can maintain internal homeostasis by means of physiological processes and are called "regulates."

Reason: Regulates can maintain internal homeostasis only up to a lilmit under stressful conditions.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

Watch Video Solution

3. Assertion: Population ecology is a link of ecology to population genetics and evolution.

Reason: Natural selection operates at population level to evolve the desired traits.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

Watch Video Solution

4. Assertion: Under unlimited resource conditions, popultion can show an exponential growth curve.

Reason: The maximum possible number of individuals can aloways be supported when enough resources are available.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

Watch Video Solution

5. A: Fig species and wasp have tight one to one relationship.

R: Angiosperms and insects are coevolved to perform a plant-pollinator interaction.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

Watch Video Solution

6. A: Five closely related species of warblers living on the same tree can avoid competitioin and co-exist

R: This occurs due to behavioural differences in their foraging activities.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

Watch Video Solution

7. A: The soil of tropical rain forest has low base content.

R: It represents transition zone between two populations of a species.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

Watch Video Solution

8. A: Estuary constitutes one of the most productive ecosystem.

R: It represents transition zone between two populations of a species.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

9. A: Environmental resistance operate to slow down exponential phase in logistic population.

R: Crash phase does not occur in this populations.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

Watch Video Solution

10. A: Different ecotypes of a species despite being genotypically different are interfertile.

R: They are locally natural selections from a pool of genetic variations found in gene pool of a species.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

Watch Video Solution

11. A : Antarctic fishes have blubber to withstand sub zero temperatures.

R: Blubber are proteins which allow the freezing of body fluids.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: D

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12. A: Cattle or goat never graze on Calotropis.

R: Thorms are present as a morphological means of defence.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: C

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13. A: An ecological niche is usually occupied by a single species

R: More than one species can live insame habitat.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: B

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14. A :Shivering is an adaption for low temperature .

R: Shivering warms up the body.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

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15. A: The interaction between sea anemone and down fish is commensalism.

R: The fish gets protection from predators but anemone does not appear to derive any benefit.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. It both Assertion & Reason are true but the reason is not the correct explanation of the assertion

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: D

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