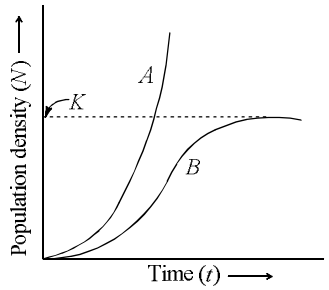
IMPORTANT PRACTICE QUESTION SERIES FOR NEET EXAM – 1

1. Pollination is an example of
   a) Mutualism b) Protocooperation c) Synergism d) Commensalism
2. Root cap is not found in
   a) Mesophytes b) Xerophytes c) Hydrophytes d) Halophytes
3. Which model is considered a more realistic one?
   a) Logistic model b) Exponential model c) Geometric model d) J-shaped model
4. Salt concentration (parts par thousand) is less than 5% in
   a) Sea water b) Inland water c) Hypersaline water d) Freshwater
5. An interaction favourable to both population, but no obligatory to either is
   a) Proto-cooperation b) Mutualism c) Commensalism d) Parasite
6. Phenomenal and rapid increase of population in a short period is called
   a) Natural increase b) Population growth c) Population explosion d) None of these
7. Life on earth originated in
   a) Air b) Water c) Soil d) All of these
8. The soil with poorest water holding capacity is
   a) Clay b) Loam c) Sandy d) None of these
9. Differentiation of various tissue and organs in response to light is called
   a) Morphogenesis b) Photomorphogenesis
   c) Organogenesis d) Embryogenesis
10. In a population, unrestricted reproductive capacity is called
    a) Biotic potential b) Fertility c) Carrying capacity d) Birth rate
11. Level of competition between species depends on
    I. availability of resources
    II. population density

III. group interaction of organism
Choose the correct combination
a) I and II b) I and III c) II and III d) I, II and III

12. Concept of mimicry was given by ...A...
Father of Indian Plant Ecology ...B...
Term 'ecology' coined by ...C...
Here A, B and C refers to
a) A-Haeckel, B-Ramdev Mishra, C-Reiter
b) A-HW Bates, B-Ramdev Mishra, C-Ernst Haeckel
c) A-HW Bates, B-Birbal Sahani, C-Ernst Haeckel
d) A-HW Bates, B-Birbal Sahani, C-Reiter
13. Partial regulators are the organism which
a) Can regulate body temperature to larger extent of environmental condition
b) Can regulate body temperature to limited extent of environmental condition
c) Can regulate body temperature only over a limited range of environmental condition
d) None of above
14. Which is the characteristics of desert plant adaptation?
a) Thick cuticle on their leaf surface b) Stomata arranged in deep pits
c) Stomata remain closed during day d) All of the above
15. A population growing in a habitat with ...A... resources show initially a ...B... phase, followed by phase of acceleration and deceleration and finally an asymptote, when the population density reaches the ...C... .
Choose the correct option for A, B and C
a) A-limited, B-lag phase, C-carrying capacity
b) A-limited, B-stationary phase, C-carrying capacity
c) A-unlimited, B-lag phase, C-carrying capacity
d) A-unlimited, B-log phase, C-carrying capacity
16. Graph A and B indicates



a) A-Logistic growth; B-Exponential growth b) A-Exponential growth; B-Logistic growth
c) A-Geometric growth; B-Logistic growth d) Either (b) or (c)
17. Altitude sickness is
a) Genotypic adaptation b) Phenotypic adaptation
c) Physiological adaptation d) Cold hardening
18. Plants grown on sandy soil, are grouped under
a) Lithophytes b) Psammophytes c) Hydrophytes d) Xerophytes
19. Ecology is basically concerned with how many levels?
a) One b) Three c) Four d) Five
20. An unrestricted reproductive capacity is called
a) Birth rate b) Biotic potential c) Carrying capacity d) Fertility
21. Asymptome stage of the population is the stage of population in which the population is
a) Changing b) Decreasing c) Increasing d) Stabilised
22. Conformers are inactive in adverse conditions due to
a) Inability to move b) Inability to digest property

c) Inability to maintain homeostasis d) Ability to maintain homeostasis

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

A – Population density at time t

B – Intrinsic rate of natural increase

C – Carrying capacity

Identify A, B and C from given equation

A B C

a) *N K r* b) *N r K* c) *K N r* d) *K r N*

24. A secondary compound are the part of the plants

a) Normal metabolism b) Secondary metabolism

c) Evolution d) Genetic difference

25. The plants that grow on saline soils with high concentration of $NaCl_2$, $MgSO_4$ and $MgCl_2$ are called

a) Succulents b) Mesophytes c) Xerophytes d) Halophytes

26. Age structure of a population influences population growth because

a) Different ago group have different reproductive capabilities

b) Different age group have same reproductive capabilities

c) More young individual indicate decreasing population

d) All of the above

27. Choose the wrong statements

I. Two species may not live in same habitat

II. The more dissimilar the niches of two species the stronger is their competition

III. Two species can occupy the same niche in geographical area

IV. No two species may occupy the same ecosystem

The correct option is

a) I, II and III b) II, III and IV c) I, II, III and IV d) III and IV

28. For better survival of the human population, which of the following steps is most important?

a) Reduction in the use of various resources b) Afforestation

c) Conservation of wild life d) Ban on mining activity

29. Photosynthetic yield is maximum at the

a) Equator region b) Polar region c) Both (a) and (b) d) Arid region

30. No population of any species in nature has its disposal ...A... resources to permit exponential growth. This leads to competition between individuals for ...B... resources. Eventually, the ...C... individual will survive and reproduce.

Choose the correct option for A, B and C

a) A-limited, B-limited, C-fittest b) A-limited, B-unlimited, C-fittest

c) A-unlimited, B-limited, C-fittest d) A-unlimited, B-unlimited, C-fittest

31. Schimper's second low related to

a) Local distribution of plants

b) Geographical distribution of plants

c) Geographical distribution of animals

d) Geographical distribution of animals and plants

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

I. An Association of two species where one is benefitted and other remains unaffected is called mutualism.

II. An interspecific association where both partners derive benefit from each other is called commensalism.

III. A direct food relation between two species of animals in which one animal kills and feeds on another is referred as predation.

IV. A relationship between two species of organisms where both are partners are

benefitted from each other is called symbiosis.

a) I and II only b) III and IV only c) I and III only d) II and III only

33. Organisms which breed only once in their lifetime

a) Pacific salmon fish b) Bamboo c) Both (a) and (b) d) None of these

34. In a population, the condition at which the rate of addition of new members is more than the rate of individuals lost indicates

a) Zero population growth b) Exponential growth

c) Fluctuating growth d) Declining growth

35. In the absence of an external source of water, Kangaroo rat in North American desert is capable of meeting all its water requirements through

a) Internal fat oxidation b) Taking liquid food

c) Reducing his activities d) Hibernation

36. Even a plant species, which makes its own food, cannot survive alone; it needs soil microbes to breakdown the ...A... matter in soil and return the ...B.... nutrients for absorption. And then, how will the plant manage pollination without an animal agent? It is obvious that in nature, animals, plants and microbes cannot live in ...C... but interact in various ways to form a biological community

Choose the correct option for A, B and C

a) A-inorganic, B-organic, C-isolation b) A-organic, B-inorganic, C-isolation

c) A-organic, B-inorganic, C-community d) A-inorganic, B-organic, C-community

37. The growth of a population without limit at its maximal rate and also that, rates of immigration and emigration are equal, then it is called

a) Carrying capacity b) Biotic potential c) Positive growth d) Negative growth

38. Which of the following characters explain the bell-shaped curve?

a) The number of pre-reproductive individual equal to the number of reproductive individual

b) Past reproductive individual are comparatively few

c) Growth is zero

d) All of the above

39. Carrying capacity is the capacity of

a) Habitat that has resources to sustain certain number of individuals

b) Population to reproduce and competitiveness

c) Population to reproduce

d) Individuals to fit among the natural environment

40. In which regions of the world are hot deserts located?

a) Equator and Tropic of cancer b) Equator and tropic of Capricorn

c) Polar region d) Tropic of cancer and Tropic of Capricorn

41. Population density of a population in a given habitat during a given period fluctuates due to change in

a) Natality and mortality b) Immigration

c) Emigration d) All of these

42. Statements

I. Recent studies support competition as suggested in 'Gauses's Competitive Exclusion Principle'

II. Gause's hypothesis says if two species compete for same resources then one will be eliminated by another species

III. More recent studies point out that species facing competition might evolve mechanisms that promote co-existence rather than exclusion

IV. Gause's competitive exclusion principle is effective when resources are in excess

V. Unlimited resources give better opportunity for adaptation

Choose the correct combination of statements

a) I, II and III b) II, III and IV c) III, IV and V d) I, IV and V

43. Different organism are adapted to their environment in terms of not only survival but also

reproduction. This statement belongs to

a) Physiological ecology b) Species ecology c) Population ecology d) All of these

44. Which determines the flora and fauna of a place?

a) Weather b) Climate c) Both (a) and (b) d) Habitat

45. Eurythermals are the organism which

a) Can tolerate wide range of temperature b) Can tolerate low range of temperature

c) Cannot tolerate low range of temperature d) Cannot tolerate wide range of temperature

46. Plants growing on sand and gravel are called

a) Eremophytes b) Psammophytes c) Psilophytes d) Oxylophytes

47. In aquatic environment the types of benthic animals are determined by

a) Type of water b) Type of sediment characteristics

c) Light availability d) Nutrient availability

48. The growth rate of a population stabilizes after

a) Logarithmic phase b) Stationary phase

c) Carrying capacity d) Negative acceleration phase

49. Why exotic species become invasive sometime and starts spreading fast because of

a) Natural predators b) Abundant natural competitor

c) Invaded land does not have its natural predators d) Mutation in their genome

50. In commensalism

a) Both partners are harmed

b) Weaker partner is benefitted

c) Both partners are benefitted

d) None of the partners is benefitted

51. Bell-shaped age pyramid indicates that

a) Number of pre-reproductive and reproductive individual is almost equal

b) Post-reproductive individuals are comparatively fewer

c) The population size remains stable

d) All of the above

52. There are two optional ways of exploitation. One way is parasitism. Which is the other one?

a) Antibiosis b) Competition c) Predation d) Commensalism

53. Population size of Siberian cranes at Bharatpur wetlands in any year is

a) 1000 b) <10 c) >100 d) = 1000

54. Prickly pear cactus species introduced into Australia in

a) 1920 b) 1930 c) 1925 d) 1929

55. Pattern of population results in a J-shaped curve obtained in

a) Logistic growth b) Exponential growth c) Sigmoid growth d) All of these

56. If non-limiting conditions are provided then what will happen?

a) Natality increases and mortality decreases b) mortality decreases

c) Natality increases d) Mortality increases

57. 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

58. Ectothermic animals are also called

a) Poikilothermal b) Cold-blooded c) Both (a) and (b) d) Isothermic

59. Highest level of biological hierarchy in the given options is

a) Biome b) Ecosystem c) Individual d) Species

60. Character displacement take place when there is

a) Geographic displacement b) Geographic overlapping

c) Geographic non-overlapping d) Habitat displacement

61. Climate is the

a) Short term property of atmosphere b) Long term property of atmosphere

c) Unchanged property of atmosphere d) All of the above

62. Gloger's rule related to the
    a) Colour b) Extremities c) Narrow wing d) Size
63. Positive growth or rapid increase in the population is indicated by
    a) Less number of young ones b) Large number of young ones
    c) Large number of old ones d) Large number of child birth
64. The soil which is transported by wind is known as
    a) Colluvial b) Eolian c) Alluvial d) glacial
65. When there are large number of post-reproductive or older individuals and lesser number of pre-reproductive individuals then that population is
    a) Growing b) Decline c) Stable d) None of the above
66. Human liverfluke (a trematode parasite) depends on which two intermediate hosts
    I. Snail
    II. Fish
    III. Pig
    IV. Mosquito
    Choose the correct combination
    a) I and III b) II and III c) III and IV d) IV and V
67. Prickly pear cactus (an exotic species) can brought under control (in Australia) by using
    a) Babul eating predators b) Kikar eating predators
    c) Cactus feeding predators d) Intensive herbicides
68. Which of the following is correct range of latitudes for temperate region?
    a) 45° to 66° b) 0° to 20° c) 20° to 40° d) 60° to 80°
69. Population is
    a) Group of similar interbreeding individuals in a particular area which complete for similar resources
    b) Group of dissimilar individuals in a particular area
    c) Group of slightly similar individuals in a particular area
    d) Intrabreeding species together make population
70. Ecological hierarchy comprises, which of the following sequence
    a) Population → Species → Community → Ecosystem → Biosphere
    b) Species →Population → Community → Ecosystem → Biosphere
    c) Species →Population → Biosphere → Community → Ecosystem
    d) Species →Population → Biosphere →Ecosystem → Community
71. In India, human population is heavily weighed towards the younger age group as a result of
    a) Short life span of many individuals and low birth rate
    b) Short life span of many individuals and high birth rate
    c) long life span of many individuals and high birth rate
    d) long life span of many individuals and low birth rate
72. Aerenchyma is the characteristics feature of
    a) Mesophytes b) Hydrophytes c) Xerophytes d) Aesophytes
73. Many fishes of freshwater can't live in sea water and $vice\text{-}versa$ because of
    a) Nutrient b) Osmotic problems c) Breathing problems d) Excretion problems
74. If b is represented → Birth rate
    If d is represented → Death rate
    If dN is represented → Increase or decrease in population size
    Then exponential growth is represented by
    a) $dN/dt = (b + d) \times N$ b) $dN/dt = (b - d) \times N$
    c) $dN/dt = (d - b) \times N$ d) $dN/dt = (d - b)^N$
75. Predator helps to create checks on

a) Prey population
b) Biological control of weeds and pests
c) Species diversity
d) All of the above

76. Animals eating plants are categorised separately as ...A..., they are in a broad ecological context, not very different from ...B...
Choose the correct option A and B
a) A-herbivores; B-predator
b) A-herbivores; B-omnivore
c) A-omnivores; B-herbivores
d) A-omnivores; B-predator

77. Logistic growth occurs when there is
a) No resistance from increasing population
b) Unlimited food
c) Fixed carrying capacity
d) All of the above

78. The niche of a population is defined as
a) Set of condition that interacts
b) Place where it lives
c) Set of conditions and resources it uses
d) Geographical area that it covers

79. Geometric representation of age structure is characteristic of
a) Biotic community b) Population c) Landscape d) Ecosystem

80. When Darwin spoke of the struggle for existence and survival of the fittest in the nature, he was conveinced that
a) Intraspecific competition is a potent force in organic evolution
b) Interspecific competition is a potent force in organic evolution
c) Intensive reproduction is the potent force in organic evolution
d) Intensive predation is the potent force in organic evolution

81. Genetic drift operates in
a) Small isolated population
b) Large isolated population
c) Fast reproductive population
d) Slow reproductive population

82. Which of the following is not true for a species?
a) Members of a species can interbreed
b) Variations occur among members of a species
c) Each species is reproductively isolated from every other species
d) Gene flow does not occur between the populations of a species

83. Zero growth means
a) Natality balance mortality
b) Natality is more than mortality
c) Natality is less than mortality
d) Natality is zero

84. Ecological age groups of a population are
I. pre-reproductive
II. reproductive
III. post-reproductive
IV. old-age group
V. adolescent age group
VI. infertile age group
Choose the correct option for given statements
a) I, II and III b) III, IV and V c) IV, V and VI d) I, V and VI

85. Sigmoid growth curve is represented by
a) $dN/dt = rN$
b) $dN/dt = rN(1 - N/K)$
c) $Nt = N_O + B + I - D - K$
d) $dN/dt = 1 - N/K$

86. In which one of the following pairs is the specific characteristic of soil not correctly matched?
a) Laterite - Contains aluminium compound
b) Terra - Most suitable for roses
c) Chernozems - Richest soil in the world
d) Black Soil - Rich in calcium carbonate

87. All aquatic vertebrates and most molluscs and cry fishes are
a) Thermoconformers b) Osmoconformers c) Oxyregulators d) All of these

88. Average temperature of thermal springs and deep sea hydrothermal vents exceeds

a) 50℃ b) 60℃ c) 70℃ d) 100℃

89. In the oceans, the environment is perpetually dark at
a) More than 100 m b) More than 500 m c) Less than 100 m d) Less than 500 m

90. Regulators are the their animals which
a) Does not maintain their body homeostasis b) Can maintains their body homeostasis
c) Can regulate their heart beat d) Can regulate their circulation

91. Population A-Have the intrinsic rate of natural increase is 0.2
Population B-Have the intrinsic rate of natural increase is 0.3
Population C-Have the intrinsic rate of natural increase is 0.4
Population D-Have the intrinsic rate of natural increase is 0.5
Which population will increase fastest among all of the given population?
a) D b) C c) B d) A

92. Humus is present in
a) Horizon-A b) Horizon-O c) Horizon-B d) Horizon-C

93. Ecosystem components includes
a) Biotic b) Abiotic c) Both (a) and (b) d) Species

94. Monarch butterflies are highly distasteful to predator due to
a) Its ugly look b) A special chemical present in his body
c) Both (a) and (b) d) A poison secreted by their special glands

95. Species living in a restricted geographical area is
a) Sympatric b) Allopatric c) Sibling d) keystone

96. Pneumatophores have lenticels for
a) Excretion b) Gaseous exchange c) Reproduction d) All of these

97. Temperature gradient over earth surface is
a) 6.4 to 6.5℃ per 1000 m altitude b) 6.4 to 6.5℃ per 1000 m latitude
c) 7.5 to 9.5℃ per 1000 m latitude d) 7.5 to 9.5℃ per 1000 m altitude

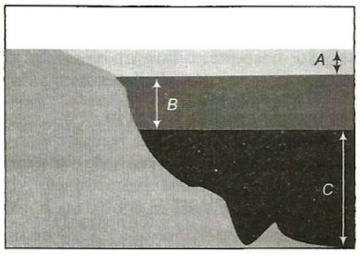
98. Abiotic factors affects the
I. Structure of organisms
II. Physiology of organisms
III. Behaviour of organisms
a) I and II b) II and III c) I, II and III d) I and III

99. Which one of the following is a matching pair of certain organism(s) and the kind of association?
a) Shark and sucker fish - Commensalism
b) Red algae and fungi in liches - Mutualism
c) Orchids growing on trees - Parasitism
d) *Cuscuta*(dodder) growing on other flowering plants - Epiphysis

100. Nature and properties of soil in different places vary due to
a) Climate b) Weathering process c) Topography d) All of these

IMPORTANT PRACTICE QUESTION SERIES FOR NEET EXAM – 2

1. r value for human population in 1981. In India was
   a) 0.205 b) 0.0205 c) 0.00205 d) 2.05
2. Statements
   I. Mutualistic relationship evolve when benefit of both species out weight the lost
   II. Mutualism relationship evolve when benefits of both species under weight the lost
   III. Human caused ecological balance by eradicating common parasite
   IV. Human caused altering competition between species
   Select the wrong pair from statements
   a) I and III b) II and III c) I and IV d) II and IV
3. Biotic potential or potential natality means
   a) Natural increase of population under ideal/optimum conditions
   b) Potential of organism in a biome
   c) Number of organisms in in a biome
   d) Species of maximum number in a population
4. I. Many xerophytic plants have thick cuticle on leaf epidermis and sunken stomata
   II. Some xerophytic plants have special photosynthetic pathway (CAM) that enables their stomata close during day
   III. $Opuntia$ has spines (modified leaves), photosynthetic phylloclade (stem)
   IV. All adaptations are genetically fixed in all organisms
   Choose the combinations of correct option
   a) I, II, III and IV b) II, III, IV and V c) III, IV, V and I d) I, II, III and V
5. Formation of wide variety of habitats takes place by
   a) Types of species inhibiting that area
   b) Types of predation
   c) Regional and local variation of environment conditions
   d) All of the above
6. Population of any species is
   a) A static phenomena b) A dynamic phenomena
   c) Neither (a) nor (b) d) Both (a) and (b)
7. Smallest unit of ecology is
   a) Organism b) Species c) Population d) Ecosystem
8. What is a keystone species?
   a) A species which adds upto 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 organization
   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.
9. Identify A, B and C



a) A–Aphotic zone, B–Euphotic zone, C–Disphotic zone
b) A–Euphotic zone, B–Disphotic, C–Aphotic zone
c) A–Euphotic zone, B–Aphotic zone, C–Disphotic zone
d) A–Aphotic zone, B–Disphotic zone, C–Euphotic zone

10. Find out the correct ones
    I. Mammals of colder climate generally have shorter ears and limbs to minimize heat loss
    II. All organisms have behavioural adaptations that allow them to respond quickly to a stressful situation
    III. Some organisms possess behavioural adaptations which allow them migrating temporarily to a less stressful situation
    IV. Invertebrates and fishes live at great depths in the ocean have biochemical adaptation to cope with high pressure
    a) I and II b) II and III c) I, III and IV d) I, II and IV
11. At high altitude we feels the sickness. The reason for sickness may be due to
    a) Low atmospheric pressure b) High atmospheric pressure
    c) High temperature d) Low temperature
12. What is probiosis?
    a) Similar to antibiosis b) Similar to amensalism
    c) Opposite to antibiosis d) Opposite to amensalism
13. A lake near a village suffered heavy mortality of fishes within a few days. Consider the following reasons for this
    I. Lots of urea and phosphate fertilizers were used in the crops in the vicinity.
    II. The area was sprayed with DDT by an aircraft.
    III. The lake water turned green and stinky.
    IV. Phytoplankton populations in the lake declined initially thereby greatly reducing photosynthesis.
    Which two of the above were the main causes of fish mortality in the lake?
    a) II and III b) III and IV c) I and III d) I and II
14. Logistic growth is represented by which equation
    a) $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$ b) $\frac{dN}{dt} = rN\left(\frac{K-N}{N}\right)$ c) $\frac{dN}{dt} = rN\left(\frac{K+N}{K}\right)$ d) $\frac{dN}{dt} = rN\left(\frac{K}{K+N}\right)$
15. Desert lizards lack the ...A... ability that mammals have to deal with the ...B... temperatures of their habitat, but manage to keep their body temperature fairly constant by ...C... means
    Choose the correct option for A, B and C
    a) A-morphological; B-high, C-behavioural b) A-physiological; B-high, C-behavioural
    c) A-behavioural; B-high, C-physiological d) A-physiological; B-high, C-morphological
16. Plants growing in dry and saline soil are called
    a) Xerophyte b) Hydrophyte c) Halophyte d) Heliophyte
17. Adaptation of parasite may be
    I. loss of unnecessary organs
    II. presence of adhesive organs
    III. origin of suckers to cling to host
    IV. loss of digestive system
    V. high reproductive capacity

Choose the correct combination

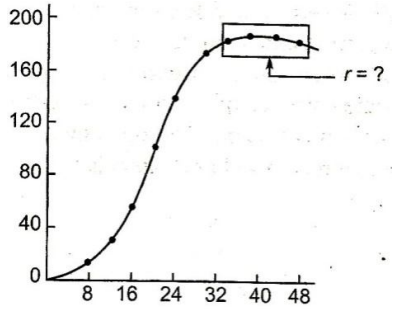
a) I, III and IV b) II, IV and V c) I, IV and V d) I, II, III, IV and V

18. 5th June is celebrated as
    a) Water day b) World environment day
    c) Conservation day d) World earth day
19. Exponential growth in plants can be expressed as
    a) $L_t = L_0 + rt$ b) $L_e = L_t rt$ c) $W_1 = W_0 e^{rt}$ d) $W_1 = W_0 ert$
20. Homeostasis is
    a) Maintaining a constant internal environment
    b) Maintaining a content internal environment
    c) Both (a) and (b)
    d) Maintaining circulation of blood
21. Ecology at the organism level is also called
    a) Anatomical ecology b) Physiological ecology
    c) Habitat ecology d) Niche ecology
22. Synecology is the study of relationship between
    a) Group of various types of organism along with their environment
    b) Individual species and its environment
    c) Between biotic and abiotic factor
    d) All of the above
23. Starfish pisaster is the important predator in intertidal communities of
    a) American pacific coast b) Indian pacific coast
    c) Middle pacific coast d) East Indian lakes
24. Under normal condition ...A... and ....B... are the most important factors influencing populations density ...C... and ...D... assuming importance only under special condition
    Choose the correct option for A, B and C
    a) A-mortality, B-natality, C-emigration, D-immigration
    b) A-immigration, B-natality, C-emigration, D-mortality
    c) A-emigration, B-natality, C-mortality, D-immigration
    d) A-emigration, B-immigration, C-mortality, D-natality
25. If the strong partner is benefitted and the weak partner is damaged. It is known as
    a) Predation b) Allelopathy c) Symbiosis d) Commensalism
26. Who stated that human population grows geometrically?
    a) Malthus b) Darwin c) Cannon d) Lamarck
27. Attribute of the organisms (morphological, physiological and behavioural) that enables organism to survive and reproduce in its habitat is called
    a) Phenotypic plasticity b) Adaptations c) Mimicry d) Surviving abilities
28. Altitude sickness occurs at high Mountains. This sickness have symptoms like
    a) Nausea b) Fatigue c) Heart palpitations d) All of these
29. Heat loss or heat gain is a function of surface area. Since small animals have a ...A... relative to their volume, they tend to lose body heat very fast, when it is cold outside; then they have to expend ...B... to generate body heat through metabolism. This is the main reason why very small animals are ...C... found in polar regions
    Choose the correct options for A, B and C
    a) A-larger surface area, B-much larger, C-rarely
    b) A-larger surface area, B-low energy, C-rarely
    c) A-smaller, B-less energy, C-rarely
    d) A-smaller, B-much energy, C-rarely
30. The organism which are present in tropical regions called
    a) Mesotherms b) Megatherms c) Microthermas d) Hekistotherms

31. You never see any cattle or goat browsing on $Calotropis$ due to
    a) Its appearance
    b) Production of foul odour
    c) Formation of cardiac glycosides
    d) Distastefulness of its leaves
32. The desert plants in order to tolerate water stress, show
    a) Sunken stomata
    b) Reduced leaves
    c) Well developed root system
    d) All of the above
33. The type of population, where pre-reproductive animals occur in large numbers, is
    a) Declining
    b) Fluctuating
    c) Stable
    d) Growing
34. Pollinator mutualism are special interactions involving ...A..., which receive food or a place to lay eggs and ...B..., which receive pollen from other of their kind.
    Choose of correct option for A and B
    a) A-insects; B-plants
    b) A-plants; B-insects
    c) A-prey; B-plants
    d) A-predators; B-plants
35. Competition is best defined as a process in which the fitness of one species (measured in terms of its 'r' the intrinsic rate of increase) is significantly
    a) Lower in presence of another superior species
    b) Higher in presence of another superior species
    c) Equal in presence of another superior species
    d) Equal in presence of their own species
36. Which characteristics determine the percolation and water holding capacity of soils?
    a) Soil composition
    b) Grain size
    c) Aggregation
    d) All of these
37. During the course of million of years of their existence most species should have evolved a relatively ...A... internal environment (within the body of organisms). This internal environment would permit all biochemical reactions and physiological functions to proceed with ...B... efficiency and therefore, increase the overall fitness of the species
    The ability of an organism to keep the internal environment constant despite drastic changes in external conditions is called ...C...
    Choose the correct option for A, B and C
    a) A-constant, B-mineral, C-thermoregulation
    b) A-constant, B-maximal, C-homeostasis
    c) A-variable, B-mineral, C-osmoregulation
    d) A-constant, B-versatile, C-homeostasis
38. To avoid the competive exclusion principle two similar species live in same area, they may evolve to become more different in order to
    a) Reduce competition
    b) Increase competition
    c) Use other species resources
    d) Drive the other species to extinction
39. Which one is right for logistic model for population growth?
    I. Population growth rate increases as the size of population approaches the carrying capacity
    II. All individual have same effect on population growth
    III. There are unlimited natural resources
    IV. As population increases the competition goes on increasing
    Select the correct combination
    a) I and II
    b) Only IV
    c) IV and III
    d) I and III
40. Choose the wrong statement
    a) Natality and immigration increases the population density
    b) Mortality and emigration decreases the population density
    c) Adverse condition does not effect the population density
    d) Food availability and predation pressure affect population density
41. Periodic departure and return of an individual in a population is known as
    a) Immigration
    b) Migration
    c) Emigration
    d) Mutation
42. Which of the following supports a dense population of plankton and littoral vegetation?
    a) Oligotrophic
    b) Eutrophic
    c) Lithotrophic
    d) Agroecotrophic
43. Reproductive value of an individual is greatest just before

a) First reproduction b) Death c) Birth d) Marriage

44. From the given graph of population growth select the correct option having correct value of '*r*' and bar graph



a) $R = -ve \rightarrow$  b) $r = -ve \rightarrow$  c) $r = -ve \rightarrow$  d) $r = 0 \rightarrow$ 

45. Parasite lives on the other parasite called
a) Fittest parasite b) Parasite on parasite c) Hyperparasite d) Hypoparasite

46. In an area there are 200 $Parthenium$ and is single banyan tree. Which of the conculsion (s) is/are correct?
I. Population density of banyan is low
II. Population cover area of banyan is high
III. In above cases the percentage of cover of biomass is more meaningful than population size
a) Only I b) I and II c) II and III d) All of these

47. Populations termed r-strategists
a) Have J-shaped growth curves b) Have type-III survivorship curve
c) Are usually pioneer species d) All of the above

48. If the mean and the madian pertaining to a certain character of a population are of the same value, the following is most likely to occur
a) A normal distribution b) A bi-modal distribution
c) A T-shaped curve d) A skewed curve

49. Hibernation is
a) Winter sleep under ground b) Summer sleep under ground
c) Spring sleep under the water d) Winter sleep under the water

50. Environment factor (s) that characterize the habitat of ecosystem is/are
a) Abiotic components b) Biotic components c) Both (a) and (b) d) Temperature

IMPORTANT PRACTICE QUESTION SERIES FOR NEET EXAM – 1 (ANSWERS)

1)	**a**	**2)**	**c**	**3)**	**a**	**4)**	**b**
5)	**a**	**6)**	**c**	**7)**	**b**	**8)**	**c**
9)	**b**	**10)**	**a**	**11)**	**d**	**12)**	**b**
13)	**b**	**14)**	**d**	**15)**	**a**	**16)**	**d**
17)	**c**	**18)**	**b**	**19)**	**c**	**20)**	**b**

21)	**d**	**22)**	**c**	**23)**	**b**	**24)**	**b**
25)	**d**	**26)**	**a**	**27)**	**b**	**28)**	**a**
29)	**a**	**30)**	**c**	**31)**	**a**	**32)**	**b**
33)	**c**	**34)**	**b**	**35)**	**b**	**36)**	**b**
37)	**b**	**38)**	**d**	**39)**	**a**	**40)**	**d**
41)	**d**	**42)**	**a**	**43)**	**a**	**44)**	**b**
45)	**a**	**46)**	**b**	**47)**	**b**	**48)**	**c**
49)	**c**	**50)**	**b**	**51)**	**d**	**52)**	**c**
53)	**b**	**54)**	**a**	**55)**	**b**	**56)**	**a**
57)	**c**	**58)**	**c**	**59)**	**a**	**60)**	**b**
61)	**b**	**62)**	**a**	**63)**	**b**	**64)**	**b**
65)	**b**	**66)**	**a**	**67)**	**c**	**68)**	**a**
69)	**a**	**70)**	**b**	**71)**	**b**	**72)**	**b**
73)	**b**	**74)**	**b**	**75)**	**d**	**76)**	**a**
77)	**c**	**78)**	**c**	**79)**	**b**	**80)**	**b**
81)	**a**	**82)**	**d**	**83)**	**a**	**84)**	**a**
85)	**b**	**86)**	**d**	**87)**	**d**	**88)**	**d**
89)	**b**	**90)**	**b**	**91)**	**a**	**92)**	**a**
93)	**c**	**94)**	**b**	**95)**	**a**	**96)**	**b**
97)	**a**	**98)**	**c**	**99)**	**a**	**100)**	**d**

1 **(a)**

Pollination is an example of mutualism in which pollinator gets nector, pollen grain, etc., and by giving that products to pollinators host gets pollinated

2 **(c)**

Root cap is not found in hydrophytes. In **hydrophytes**, the root is either absent or poorly developed. In floating aquatic plants, root pockets are found, e.g., *Lemna*, *pistia*, *Eichhornia*.

3 **(a)**

No population have the unlimited resources to survive and reproduction. Every population in nature has given a certain amount of natural resources that is limited.

Keeping this point of view logistic growth is the more realistic than the exponential growth curve

4 **(b)**

Salt Concentration	**Salinity in Parts per Thousand**
Less than 5% 30-35% > 100%	Inland water Sea water Hypersaline water

5 **(a)**

Proto-cooperation is the interaction between two living organisms of different species in which both are mutually benefied but they can live without each other.

6 **(c)**

The tremendous increase in the size and growth of a population in a short period is known as population explosion.

7 **(b)**

Next to temperature water is most important factor, which influences the life. Life originated in water. Even now life is unsustainable without water

8 **(c)**

Water holding capacity is the extent to which a soil can hold capillary water against gravity. It is defined as the amount of water retained by unit weight of dry soil, when immersed in water under standardised condition. Sandy soil has poorest water holding capacity.

9 **(b)**

In plants growth is favoured by increased availability of food, moderate light intensity and red light. Maximum photosynthesis occurs in red light Blue light favours moderate but normal growth. Differentiation of various tissue and organs in response to light is called photomorphogenesis. Aphids develops wings in response to alternate light and darkness

10 **(a)**

Chapman (1928) proposed the term biotic potential to designate maximum reproductive power. He defined it as the inherent power of an organism to reproduce, to survive, i.e., to increase in number. But there is a natural check called environment resistance.

11 **(d)**

Level of competition depend upon the many factors like

(i) Resources availability

(ii) Population density

(iii) Group interaction of organisms

12 **(b)**

(i) The concept of mimicry was first given by HW Bates in 1862

(ii) Father of Indian plant Ecology is Ramdev Mishra. Ecological studies were initiated in India by W Dudgeon

(iii) The term 'ecology' was coined by Ernst Haeckel in 1861

13 **(b)**

Some species are partial regulators. They have the ability to regulate their body temperature up to certain limit. Beyond that limit they become conformers. Further it is not essential that regulators of one attribute would be regulator in other attributes as well

14 **(d)**

Plant Adaptation to Water and Heat (xerophytes) They are plants of dry habitats where the environment favours higher rate of transpiration than the absorption. Xerophytes plants normally have thick cuticle on their leaf surface, stomata arranged in deep pits, stomata of xerophyte plant remain closed during day to reduce the high transpiration

Xerophytes are four types

(i) **Ephemerals** (Drought escapers) The plant live for a brief period during rain. The rest of year is passed in the form of seed

e. g., *Euphorbia prostrate, Boerhaavia*

(ii) **Annuals or Drought Evaders** They live even after the few weeks of rain. Their, size are small, leaves have thick waxy, hairy coating with or without prickles, *e. g.*,*Echinops, Solanum*

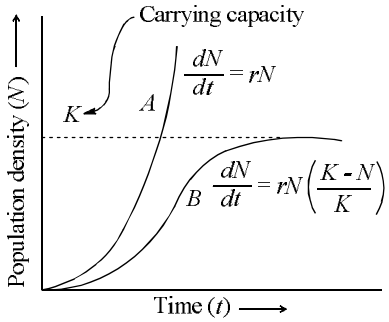
(iii) **Succulents or Drought Resistants** The plants have fleshy organs where water and mucilage are stored. *e. g.*, *Opuntia, Aloe, Agave*

(iv) **Non-succulents or Drought Endurers** They are true xerophytes which actually tolerate drought conditions. They have smaller shoot system. The root system is very extensive. Many tropical plants of hot and arid regions perform C_4-photosynthesis. They uses less water even at high temperature

15 **(a)**

A-Limited, B-Lag phase, C-Carrying capacity

16 **(d)**



Population growth curve A when resources are not limiting. Plot is exponential or geometrical curve B. When resources are limiting the growth, plot is logistic.
'K' is carrying capacity

17 **(c)**

Physiological adaptation.
Nausea, fatigue, heart palpitations is due to unavailability of proper oxygen in the body. At high mountain the atmospheric pressure is low. So, O_2 is not easily available for Respiration. So for improve efficiency of respiration is increased by increasing RBC increasing the binding efficiency of haemoglobin

18 **(b)**

Sammophytesare grown on sandy soils. Lithophytes are grown on bare soils. Hydrophytes are grown on aquatic habitat.
Xerophytes are grown on dry habitat.

19 **(c)**

Ecology is basically concerned with four levels of biological organisation. *They are*
(i) organisms (ii) populations
(iii) communities (iv) biomes

20 **(b)**

Biotic potential is a rate at which a population of a given species will increase when no limits are placed on its rate of growth.

21 **(d)**

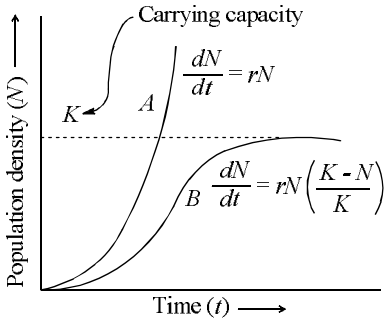
Asymptome stage of the population is the stage of population in which population birth rate is equal to the death rate in other words population is stabilised

22 **(c)**

Inability to maintain homeostasis.
Conformers Their body temperature changes with the surrounding temperature they are also called ectothermers. 99% of animals are conforms
Regulators Some organisms are able to maintain a constant body temperature and constant osmotic concentration despite change in external environment. They are called regulators
Partial regulators Some organisms have the ability to regulate their body functions to a limited extent called partial regulators. Beyond that limit they become conformers

23 **(b)**

$A-N, B-r, C-K$
Logistic Growth Model No population can continue to grow exponentially, as the resource availability become limiting at certain point of time. Logistic growth model have fixed carrying capacity
It is described by the equation $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$ Rate of change of population density
N = Population density at time
N = Population density
r = Intrinsic rate of natural increase
K = Carrying capacity



Population growth curve A when resources are not limiting. Plot is exponential or geometrical curve B. When resources are limiting the growth, plot is logistic
'K' is carrying capacity

24 **(b)**

Secondary compound or metabolites are the compound which are not the resultant of normal metabolism. They are formed due to special need of a organism like in *Calotropis*. (production of poisonous cardiac glycosides). Some examples of secondary compounds or metabolites are nicotine, caffeine, quinine etc. They are formed by the resultant of secondary metabolism

25 **(d)**

Halophytes are the plants growing in and tolerating very salty soil typical off shores of tidal river estuaries, salt marshes or alkali desert flats. Generally, these soils (saline) have very high concentration of salts like$NaCl_2$, $MgSO_4$ and$MgCl_2$.

26 **(a)**

Different age group have different reproductive capabilities due to that population growth influences. For example when pre-reproductive age group is more than the reproductive and post-reproductive. Then this type of population is expanding population

27 **(b)**

The more the dissimilar the niches of two species the lesser is competition between them. Two closely, related species competiting for same resource can't co-exist. Indefinitely and competitatively inferior one will be eliminated out (Gause's principle)

28 **(a)**

Natural resources are limited and necessary for survival of mankind. Thus, these should be used in limited quantity for better survival with increase in the population.

29 **(a)**

In tropical areas (equator) there are more sun light than the other areas. So, tropical areas have more photosynthetic yield than other areas

30 **(c)**

A-Unlimited, B-Limited, C-Fittest

31 **(a)**

Schimper's Second Law The local distribution of plants (and hence, the occurrence of animals) is determined by soil. In an aquatic habitat, the sediment characteristics determined not only the submerged anchored hydrophytes, but also the benthic animals

32 **(b)**

Predation is a direct food relation between two species of animals, in which one animal (the predator) captures and feeds on another (the prey).
In **symbiosis**, two organisms live together in close physical association from which one or both derive benefit.

33 **(c)**

The organism which breed only once in their life time is called monocarpic. *e*. *g*., salmon fish, bamboo

34 **(b)**

If more individuals are added and only some are lost, then the population will show positive growth, i.e., exponential growth.

35 **(b)**

Many adaptation have evolved over a long evolutionary time in Kangaroo rat. In the absence of an external source of water, the kangaroo rat in North America deserts capable of meeting all its water requirements through internal fat oxidation (in which water is by product). It also has the ability to concentrate its urine, so that minimal volume of water is used to remove excretory the products

36 **(b)**

A-organic, B-inorganic, C-isolation

37 **(b)**

Biotic potential is the inherent capacity of an organism to increase in numbers under ideal conditions, i.e., maximum reproductive capacity when environment resources are non limiting, conditions favour minimum mortality (absence of competition, predation, parasitism, etc.) and rates of immigration and emigration are equal.

38 **(d)**

When the number of pre-reproductive individual equal to no. of reproductive non-individual is obtained a bell-shaped curve

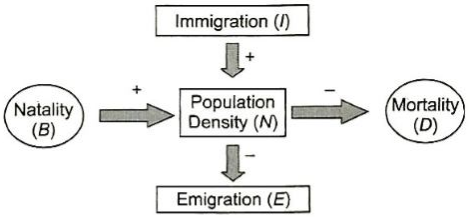
39 **(a)**

Carrying Capacity (K) A given habitat has limited resources to support a certain number of individuals of a population beyond which no further growth is possible. This limit is called as nature's carrying capacity (K) for that species

40 **(d)**

Desert is an area in which the vegetation is sparse and the ground surface in thus, exposed to atmosphere and the associated physical force. The hot deserts of world are located in the region of **tropic of Cancer**and **tropic of Capricorn**

41 **(d)**



(−) Sign indicates factors decreasing population density

(+) Sign indicates factors increasing population density

42 **(a)**

Gause's competitive exclusion principal is effective when resources are limited. Limited resources gives better opportunity for adaptation

43 **(a)**

Physiological ecology.

Ecology at the organismic level is essentially called physiological ecology which tries to understand how different organisms are adapted to their environments in terms of not only survival but also reproduction

44 **(b)**

Climate.

Differences between weather and climate

Weather	**Climate**
It is a short term property of the atmosphere.	It is the long term property of the atmosphere. It is average weather.

Weather changes from place to place.	Climate is same over larger area.
Weather changes have little impact on flora and fauna of a place.	Climate determines the flora and fauna of a place.
Changes in weather occur from time to time	Climate remains the same over a long period of time

45 **(a)**

Eurythermal organisms are those organisms, which can tolerate wide range of temperature variations. Most mammals and birds can live at very wide temperature variation

46 **(b)**

Psammophytes grow on sand and gravel.

47 **(b)**

Benthic animals are animals which lives at the bottom of water. Their diversity and distribution determined by type of sediment characteristics like rocky or soil surface

48 **(c)**

Carrying capacity can be defined as the level beyond, which no major increase can occur. This limit is constant and represented by K. When a population reaches the carrying capacity of its environment, the population has zero growth rate so, the growing rate of a population stabilizes around the carrying capacity.

49 **(c)**

When there is no natural predator of a species than it goes on increasing until on unless, nature does not resist that species

50 **(b)**

Commensalism is an association in which two or more populations live together without entering into any kind of physiological exchange. Here only one species is benefitted.

51 **(d)**

All of above.

A bell-shaped polygon indicates a moderate proportion of young to old. As the rate of growth becomes slow and stable, the pre-reproductively and reproductive age group become more or less equal in size and post-reproductive group remaining as the smallest. In stable population 'r' is zero. And bell-shaped curve only possible when $r = 0$ means growth of population is zero

Age pyramid Graphic representation of different age groups found in a population with pre-reproductive group at the base. Reproductive ones in the middle and post-reproductive group at the top is called age pyramid.

Age pyramid have three kinds

(i) **Triangular Age Pyramid** The number of pre-reproductive is very large. Number of reproductive individual is moderate and post-reproductive are fewer. Population size is growing

(ii) **Bell-shaped Age Pyramid** The number of prereproductive and reproductive individuals is almost equal. Post-reproductive individuals are comparatively fewer. Population size is stable

(iii) **Urn-shaped Age Pyramid** Proportion of reproductive age group is higher than the individuals in pre-reproductive age group. Number of post-reproductive individuals is also sizable. It is declining population with negative growth

52 **(c)**

In exploitation, one species harms the other by making its direct or indirect use for support,

shelter or food. In contrast with parasite which derives nourishment form its host without killing, a predator is free living which catches and kills another species for food.

53 **(b)**

Population size of Siberian cranes at Bharatpur wetlands in any year is less than 10.

Population size The size of a population depends upon several factors like mortality, natality, etc. The size in nature could be as low as less than 10 (Siberian cranes at Bharatpur wetlands in any year) or go in million (*Chlamydomonas* in a pond).

Population size, more technically called population density (designated as N) need not necessarily be measured in numbers only. Although the total number is the most appropriate measure of population density. But in some cases in is different to determine

For example

In a forest area suppose there are 200 *Parthenium* plants but only a single banyan tree will huge canopy

The following inference could be made

(i) Population density of banyan is low

(ii) Population cover area of banyan to high

In this example percentage of cover of biomass is more meaningful than population size

54 **(a)**

The prickly pear cactus introduced into Australia in 1920's caused Havoc by spreading rapidly into million of hactares of range land. Finally invasive cactus was brought under control only after a cactus-feeding predator (a moth) from its natural habitat was introduced into the country

55 **(b)**

Exponential growth curve.

As we can see clearly in the given diagram that the growth of the population is unlimited and increasing. That is the distinguish feature of exponential growth model or curve. As it has the J-shaped appearance so, it is also called J-shaped curve

56 **(a)**

Due to non-limiting condition, natality (birth rate) will increase and mortality (death rate) will decrease, that will cause population explosion.

57 **(c)**

Deserts have a very hot days and very cold nights. Due to bare plant cover, the soil of desert is much more exposed to these fluctuations as compared to that of other areas. During day time, the soil becomes hot and in night it frequently, becomes cool.

58 **(c)**

Poikilothermic or cold-blooded or ectotherms are those animals (*e. g.*, reptiles, fish, amphibians) in which the body temperature fluctuate with change in environment temperature

59 **(a)**

Bioma is a large regional unit delimited by a specific climatic zone having a particular major vegetation zone associated with fauna, *e. g.*,ocean, tropical rainforest

60 **(b)**

Character displacement was first explicitly explained by William L Brown and EO Wilson (1956); Two closely related species have overlapping ranges. In the parts of the ranges where one species occurs alone, the population of that species are similar to theother species and may even by very difficult to distinguish from it.

In the area of overlap, where the two species occur together, the populations are more divergent and easily distinguished, *i.e.,* they 'displace' one another in one or more characters. The characters involved can be morphological, ecological, behavioral or physiological; they are assumed to be genetically based

Competitive release (Grant; 1972), defined as the expansion of an ecological niche in the

absence of a competitor, is essentially the mirror image of character displacement. It too was described by Brown and Wilson (1956). Two closely related species are distinct where they occur together, but where one member of the pair occurs alone it converges toward the second, even to the extent of being nearly identical with it in some characters

61 **(b)**

Differences between weather and climate

Weather	**Climate**
It is a short term property of the atmosphere.	It is the long term property of the atmosphere. It is average weather.
Weather changes from place to place.	Climate is same over larger area.
Weather changes have little impact on flora and fauna of a place.	Climate determines the flora and fauna of a place.
Changes in weather occur from time to time	Climate remains the same over a long period of time

62 **(a)**

Gloger's Rule In warm-blooded animals, including, humans, pigmentation is little in colder areas, yellow brown to red in arid climates and black in humid hot areas

63 **(b)**

A population having large number of young individuals will show rapid increase in population. It is called positive growth

64 **(b)**

Depending on the nature of transporting agents, the transported soil may be

(i) **Glacial** Transported by glaciers (large mass of snow ice.)

(ii) **Eolian** Transported by wind

(iii) **Alluvial** Transported by running water

(iv) **Colluvial** Transported by gravity.

65 **(b)**

A population with large number of post-reproductive or older individuals and lesser number of pre-reproductive individuals will show a negative growth rate or decline growth.

Age pyramid Graphic representation of different age groups found in a population with pre-reproductive group at the base. Reproductive ones in the middle and post-reproductive group at the top is called age pyramid.

Age pyramid have three kinds

(i) **Triangular Age Pyramid** The number of pre-reproductive is very large. Number of reproductive individual is moderate and post-reproductive are fewer. Population size is growing

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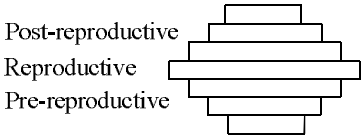


66 **(a)**

Human liver fluke depend upon two intermediate host-a snail and pig to complete its life cycle

67 **(c)**

Cactus feeding predator.

The prickly pear cactus introduced into Australia in 1920's caused Havoc by spreading Rapidly into million of hactares of range land. Finally invasive cactus was brought under control only after a cactus-feeding predator (a moth) from its natural habitat was introduced into the country

68 **(a)**

The zone extends between 45° to 66° in northern and 45° to 66° in southern hemisphere is called **temprate zone**.

69 **(a)**

Population is group of similar individuals in a particular geographical area which share or complete for similar resources, potentially interbreed. Different populations of the same organism present in a particular geographical areas are called local population or domes

70 **(b)**

Ecological hierarchy or ecological levels or organisation.

Organisation is the arrangement and coordination of small components into larger components in a hierarchy, where each level is formed of components of lower level and itself becomes constituent of still higher level

Hierarchy in a organisation from the level of biomolecules to organismic level is called biological hierarchy or biological organisation. The hierarchy in the levels of organisation connected with ecological grouping of organism is called ecological hierarchy or ecological level of organisation

There are no sharp lines or breeks in the functional sense amongst various level of ecological hierarchy as the same individual is a components of population, biological community as well as ecosystem

71 **(b)**

In India, population is heavily weighed towards the younger age groups due to short life span and high birth rate.

72 **(b)**

Hydrophytes.

Plants of aquatic habitat is called the hydrophytes. Hydrophytes possess aerenchyma or air storing parenchyma to support themself in water

73 **(b)**

Osmotic problems.

Some organisms are tolerant to wide range of salinities called euryhaline, $e.g.$, salmon fish but others are restricted to narrow range called stenohaline like shark and string rays.

Many freshwater animals cannot live for long in sea water and *vice-versa* because of the osmotic problems they would face

74 **(b)**

$dN/dt = (b - d) \times N$.

Exponential Growth Model When the resources availability is unlimited in the habitat, the population grows in an exponential or geometric fashion. As resources are unlimited than there is no inhibition from crowding.

The equation is; $dN/dt = (b - d) \times N$ [b = Birth rate, d = Death rate

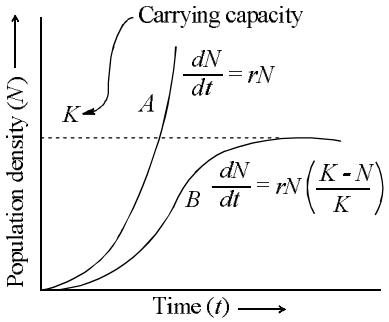
N = Population density, $\frac{dn}{dt}$= Rate of change of population

Let (*b*-*d*) = *r*, then the equation is, $dN/dt = Rn$

r = Intrinsic rate of natural increase

When a population shows exponential growth, the curve plotted with N in relation to time, assume J shape

In this there is no fix carrying capacity



75 **(d)**

Predators also help in maintaining species diversity in a community by reducing the intensity of competition among competing prey species. Predator can also be used for biological control of weeds and pests

76 **(a)**

A-Herbivores, B-Predators

77 **(c)**

Logistic Growth Model No population can continue to grow exponentially, as the resource availability become limiting at certain point of time. Logistic growth model have fixed carrying capacity

It is described by the equation $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$ Rate of change of population density

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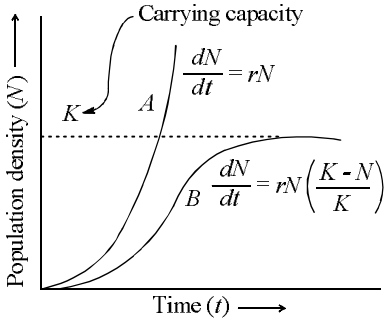


Population growth curve A when resources are not limiting. Plot is exponential or geometrical curve B. When resources are limiting the growth, plot is logistic

'K' is carrying capacity

78 **(c)**

Niche is the specific physical space occupied by an organism and the functional role of organism in the ecosystem. Thus, an organism's niche is defined by the types of food it consumes, its predators, temperature, tolerance, etc.

79 **(b)**

Geometric representation of age structure is a characteristic of population. In most populations, individuals are of different ages. The proportion of individuals in each age group is called age structure of that population.

80 **(b)**

It is generally believed that competition occurs when closely related species compete for same resources that are limiting. But this is not true unrelated species also compete for

same resources. This is called interspecific competition which proves to be the potent force in organic evolution

81 **(a)**

Genetic drift operates in small isolated population.

82 **(d)**

Gene flow means the spread of genes through population as affected by movements of individuals and their propagules, e.g., spores, seeds etc. Gene flow ensures that all population of a given species share a common gene pool, i.e., it reduces difference between populations.

83 **(a)**

Zero growth rate means natality (*i.e.,* birth rate) balances the mortality (*i.e.,* death rate)

84 **(a)**

A population has three ecological age groups

(i) Pre-reproductive

(ii) Reproductive

(iii) Post-reproductive

This division of population given by Bodenheimer in 1958

85 **(b)**

Sigmoid growth curve is represented by

$dN/dt = rN\left(\frac{1-N}{K}\right)$

Most populations do not show exponential increase because their environment prevents this.

86 **(d)**

Black soil is dark black or dark brown in colour. It is formed from basaltic rock under semi-arid condition. Black soil is deficient in nitrogen and phosphorus and rich in potash and lime and not in calcium carbonate.

87 **(d)**

All vertebrates most molluscs and cry fishes are oxyregulators but with the exception of birds and mammals, they are thermoconformers and osmoconformers

88 **(d)**

There are unique habitats such as thermal springs and deep sea hydrothermal vent where average temperature exceeds 100°C

89 **(b)**

Deep (>500 m) in the oceans the environment is perpetually dark and its inhabitants are not aware of the existence of celestial source of light

90 **(b)**

Regulators Some organisms are able to maintain a constant body temperature and constant osmotic concentration despite change in external environment. They are called as regulators. Only bird, mammals belong to category of regulators

91 **(a)**

Population having highest intrinsic rate will increase fastest among all of the given populations

92 **(a)**

In soil profile, **A-horizon**is present under the litter zone and is called as top-soil. It is the the zone of eluviations that contains a relatively high content of **organic matter**but mixed with mineral water. It is further divided into three sub-zones :

(i)$\mathbf{A_1}$ **region** : It is dark and rich in organic matter. Finely divided organic matter here, becomes mixed with the mineral matter and is known as **humus**. It is dark brown or black coloured.

(ii)$\mathbf{A_2}$**-region** : It contains less humus and is called as the zone of maximum leaching.

(iii) **A_3-region** : It is transitional to B-zone but is more like the A-zone than B. Sometimes, it is totally absent.

93 **(c)**

Components of ecosystems are

Biotic Living members of an ecosystem

Abiotic Non-living members of an ecosystem

94 **(b)**

Monarch butterfly is highly distasteful to its predator because of special chemical present in their body. Interestingly the butterfly acquires this chemical during its caterpillar stage by feeding on poisonous weeds

95 **(a)**

The species living in a restricted or overlapping area of geographical distribution, are called **sympatric species**.

96 **(b)**

A number of mangroove plants possess small negatively geotrophic vertical roots called pneumatophores. Pneumatophores have lenticels for gaseous exchange. They are connected with internal arenchymatous tissue. It is a plant adaptation to saline environment

97 **(a)**

Temperature gradient over the earth's surface is 6.4-6.5°C per 1000m altitude or 10° latitude. Therefore, there is lowering of mean temperature from equator to poles. Tropical, sub-tropical, temperate and arctic organisms living in these zones are respectively called Megatherms, mesotherms, microtherms and hekistotherms

98 **(c)**

All of the above.

The most important elements that lead to so much variation are temperature, water, light, soil. Physio-chemical components alone do not characterize the habitat of an organism completely. It includes biotic factors also. So for characterization of habitat both abiotic and biotic components are needed

99 **(a)**

Shark and sucker fish (*Echenis*) association is an example of commensalism (without continuous contact).

100 **(d)**

Soil Nature and properties of soil depends on climate, weathering process or breathring of rocks into fine powder can occur due to atmospheric changes, mechanical forces, chemical changes and biological breakdown.

The physical and chemical properties of soil determine the type of plants that can grow in particular habitat and the characteristics of the bottom sediments of aquatic environment determine type of benthic animals

IMPORTANT PRACTICE QUESTION SERIES FOR NEET EXAM – 2 (ANSWERS)

1)	**b**	**2)**	**b**	**3)**	**a**	**4)**	**d**
5)	**c**	**6)**	**b**	**7)**	**a**	**8)**	**a**
9)	**b**	**10)**	**c**	**11)**	**a**	**12)**	**c**
13)	**d**	**14)**	**a**	**15)**	**b**	**16)**	**c**
17)	**d**	**18)**	**b**	**19)**	**c**	**20)**	**a**
21)	**b**	**22)**	**a**	**23)**	**a**	**24)**	**a**
25)	**a**	**26)**	**a**	**27)**	**b**	**28)**	**d**
29)	**a**	**30)**	**b**	**31)**	**c**	**32)**	**d**
33)	**d**	**34)**	**a**	**35)**	**a**	**36)**	**d**
37)	**b**	**38)**	**a**	**39)**	**b**	**40)**	**c**
41)	**b**	**42)**	**b**	**43)**	**a**	**44)**	**d**
45)	**c**	**46)**	**d**	**47)**	**d**	**48)**	**a**
49)	**a**	**50)**	**d**				

1 **(b)**
In 1981, the r value for human population in India was 0.0205. To find out the value of $r$we need to know the birth and death rates

2 **(b)**
Mutualistic relationship evolve when benefit is more than the cost. Human caused ecological imbalance by eradicating common parasite and anthropogenic pollution is causing extinction of many species

3 **(a)**
Biotic potential is natality under optimum condition. The actual birth rate under existing condition is called realized natality.

4 **(d)**
All adaptations are not genetically fixed, like behavioural adaptation. Hibernation and aestivation adaptations for avoiding extreme temperature also not genetically fixed

5 **(c)**

Regional and local variation of environment conditions with in biome lead to the formation of a wide variety of habitats

6 **(b)**

Population keeps on changing due to various factors like immigration, emigration, natality and mortality. So, it is dynamic rather than stable phenomena

7 **(a)**

Organism is the smallest unit of ecological study.

Organisation is the arrangement and coordination of small components into larger components in a hierarchy, where each level is formed of components of lower level and itself becomes constituent of still higher level

Hierarchy in a organisation from the level of biomolecules to organismic level is called biological hierarchy or biological organisation. The hierarchy in the levels of organisation connected with ecological grouping of organism is called ecological hierarchy or ecological level of organisation

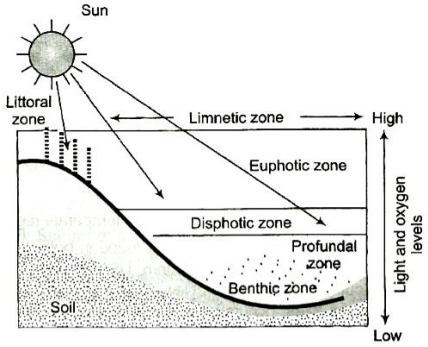
There are no sharp lines or breeks in the functional sense amongst various level of ecological hierarchy as the same individual is a components of population, biological community as well as ecosystem

8 **(a)**

Species having much greater influence on community characteristics, relative to their low abundance or biomass are called keystone species, e. g., in tropical forests, figs are Keystone species. Removal of these species causes serious disruption in the functioning of community.

9 **(b)**

Light Zones in Aquatic Habitats There is a light zonation in deep lakes and oceans



(i) **Littoral Zone** It is shallow coastal region. Light is able to pass through shallow water and reach the bottom. Therefore, producers occur throughout from surface to bottom

(ii) **Limnetic Zone** It is open water zone where water is very deep. Amount of oxygen and light decreases with depth.

Limnetic zone has following three parts

Photic Zone It is upper part of limetic zone to which light can penetrate. Depth is up to 200 m. The upper part of photic zone, called **euphotic zone**, receives light more than the compensation point. Its depth is 20-80 m. The lower part of the photic zone, called **disphotic zone** (twilight zone), receives light at or below the compensation point.

Blue light being made of short wave radiations can reach the deepest. Red light has poor penetrability. In sea the green algae remain near the surface, brown algae in intermediate depths, while red algae flourish the deepest in the photic zone

Aphotic/Profundal Zone It is zone of deep water below the photic zone and above the bottom to which light does not penetrate. The zone is, therefore, in perpetual darkness. Producer to not occur in this part. Instead only consumers are found

Benthic Zone It is the bottom zone. In deep lakes and seas, the bottom is also in perpetual darkness but in shallow waters, light does penetrate

10 **(c)**

I, III and IV.

Some organisms show behavioural adaptation to cope with variation in environment. Desert lizards lack the physiological ability to deal with high temperature. They keep their body temperature fairly constant by behavioural means. They enjoy in sun and absorb heat when their body temperature is low. When their body temperature starts increasing it moves into shades

11 **(a)**

At the high altitude there is low atmospheric pressure and due to that body does not get enough oxygen, which leads to altitude sickness

12 **(c)**

Probiosis It is opposite to the antibiotic. Probiosis is the phenomena in which organism secretes chemicals which are useful to the growth of other organism. Generally, it is found in intestinal flora

13 **(d)**

A lake near a village suffered heavy mortality of fishes within a few days, because lots of urea and phosphate fertilizers were used in the crops in the vicinity and the area was sprayed with DDT by an aircraft.

14 **(a)**

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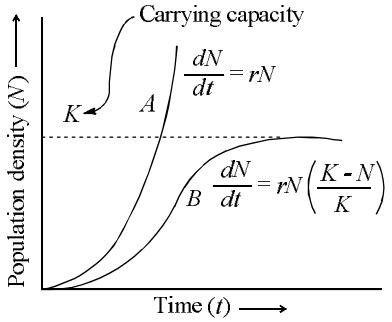

Population growth curve A when resources are not limiting. Plot is exponential or geometrical curve B. When resources are limiting the growth, plot is logistic

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15 **(b)**

A-Physiological; B-High, C-Behavioural

16 **(c)**

Halophytes are special types of xerophilous plants, which grow on saline soils with high concentration of salts like NaCl, $MgCl_2$, and $MgSO_4$.

17 **(d)**

In accordance to their life style parasite evolved special adaptation such as loss of digestive systems, loss of unnecessary organs, presence of adhesive organs, origin of suckers and high reproductive capacity accordance to their host

18 **(b)**

5th June-world environment day

22nd April-world earth day

19 **(c)**

The exponential growth can be expressed as

$$W_1 = W_0 e^{rt}$$

Where,

W_1 = Final size(weight, height, number, etc.)

W_0 = initial size of the beginning of trhe period

r = Growth rate

t = Time of growth

e= base of natural logarithms

Here, r is the relative growth rate and is also the measure of the ability of the plant to produce plant material, referred to as efficiency index. Hence, the final size of W_1 depends on the initial size W_0.

20 **(a)**

Homeostasis is the phenomenon of maintaining a constant internal environment despite changes in external temperature. Endothermal animal show temperature homeostasis

21 **(b)**

Ecology at the organismic level is essentially called physiological ecology which tries to understand how different organisms are adapted to their environments in terms of not only survival but also reproduction

22 **(a)**

Synecology is the study of reciprocal relationships between composition organisation and development of communities and their environment

23 **(a)**

Predator help in maintaining species diversity. In the rocky intertidal communities of American pacific coast starfish pisaster is important predator. In an field experiment when all the starfish were removed from an enclosed intertidal area more than 10 species of invertebrates becomes extinct with in a year, because of interspecific competition

24 **(a)**

A-Mortality, B-Natality, C-Emigration, D-Immigration

25 **(a)**

Predation is non-symbiotic consertism with damage to one for the benefit of the other. In this phenomenon consertism includes both harmful and beneficial coactions and may occur between two animals, two plants, or plant and animal. A strong partner kills or damages the weaker one for food.

26 **(a)**

Malthuscalculated that thoughthe number of organisms can increase geometrically (1, 2, 4, 8, 16.....),their food supply increases arithmetically (1, 2, 3, 4.....).

27 **(b)**

Adaptation develop due to natural selection of suitable variations appearing in living beings through mutation and recombination. It enables organism to survive and reproduce in its habitat

28 **(d)**

Nausea, fatigue, heart palpitations is due to unavailability of proper oxygen in the body. At high mountain the atmospheric pressure is low. So, O_2 is not easily available for Respiration. So for improve efficiency of respiration is increased by increasing RBC increasing the binding efficiency of haemoglobin

29 **(a)**

A-Larger surface area, B-Much larger, C-Rarely

30 **(b)**

Organism, which present in tropical regions are called megatherms.

Temperature gradient over the earth's surface is 6.4-6.5°C per 1000m altitude or 10° latitude. Therefore, there is lowering of mean temperature from equator to poles. Tropical, sub-tropical, temperate and arctic organisms living in these zones are respectively called Megatherms, mesotherms, microtherms and hekistotherms

Zone	**Latitude**	**Mean Annual Temperature**	**Winter**	**Vegetation**
Tropical	0° – 20°	Above-24°C	Nil	Tropical forests
Sub-tropical	20° – 40°	17° – 24°C	Mild winter	Sub-tropical deciduous forest
Temperature	40° – 60°	7° – 17°C	Winter with occasional show	Mixed coniferous forest
Arctic and Antarctic	60 – 80°	Below-7°C	Severe prolonged winter with abundant show	Arctic forest

31 **(c)**

The *Calotropis* produces highly poisonous cardiac glycosides and that's way. It is rare to see any cattle browsing on this plant

32 **(d)**

Plants growing in desert are called xerophytes. These have well developed root system, reduced leaves and sunken stomata to reduce transpiration.

33 **(d)**

In a growing population, the pre-reproductive, i.e., immature animals occur in large number.

34 **(a)**

A-Insects; B-plants

35 **(a)**

Competition is best defined by the fitness of one species as compared to the other competitive species. It is lower in case of other superior competiting species

36 **(d)**

Various characteristics of the soil such as soil composition, grain size and aggregation determine the percolation and water holding capacity of the soil. These characteristics along with parameters such as pH, mineral composition and topography determine the large extent vegetation in any area

37 **(b)**

A-Constant, B-Maximal, C-Homoeostasis

38 **(a)**

To avoid the competitive exclusion principle two similar species adapt differently to reduce the competition. So that two species can live in same area. Therefore competition does not always result in extinction of species

39 **(b)**

Logistic model shows that

As population increases the competition goes on increasing.

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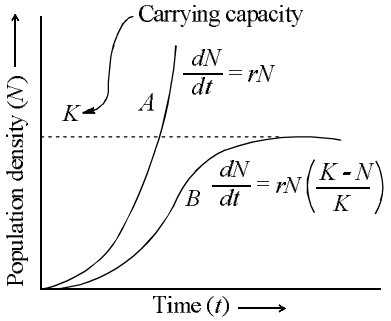

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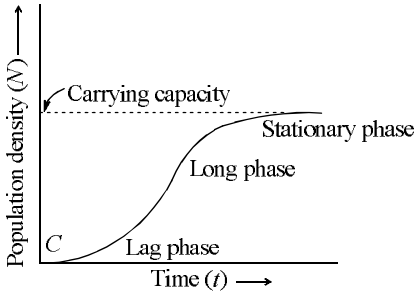
A population growing in a habitat with limited resources shows three phases.

(i) **Lag phase** It is the initial phase in which a population adapt themself according to the environment and starts to increase their number

(ii)**Log phase** It is the second phase in which a population use its resources maximally and increases their number exponentially. Number of birth >> Number of death

(iii) **Stationary phase** It is the 3rd phase in which the population reached the carrying capacity level and population get stationary position. No of death = No of death



40 **(c)**

Adverse condition affect the population by influencing on natality and mortality of the population. It also effects the immigration and emigration

41 **(b)**

Migration It is the temporary departure and return of organism due to unfavourable condition of the environment $e.g.$, bird migration from Siberia and other extremely cold Northern region

Whereas, immigration and emigration are the permanent phenomena

42 **(b)**

Eutrophication means nutrient enrichment. The main factor that causes eutrophication is the release of large amount of phosphate into water body.

43 **(a)**

Reproductive value *Reproductive value may refer to several ideas*

Reproductive value (social psychology), the attributes of a potential partner in male

selection. Reproductive value (population genetics), the contribution of an individual to the future generations and it is maximum when individual is just about to reproduce

44 **(d)**

A bell-shaped polygon indicates a moderate proportion of young to old. As the rate of growth becomes slow and stable, the pre-reproductive age group become more or less equal in size and post reproductive group remaining as the smallest.

45 **(c)**

Hyperparasite It is the parasite which lives on another parasite, *e.g.*, some bacteriophage (bacterial, viruses), *Bacterium Parteurella pestis* in *Xenopsylla chaeopsis* (rat flea) which is hyperparasite on rat

46 **(d)**

All of these.

Population size The size of a population depends upon several factors like mortality, natality, etc. The size in nature could be as low as less than 10 (Siberian cranes at Bharatpur wetlands in any year) or go in million (*Chlamydomonas* in a pond).

Population size, more technically called population density (designated as N) need not necessarily be measured in numbers only. Although the total number is the most appropriate measure of population density. But in some cases in is different to determine

For example

In a forest area suppose there are 200 *Parthenium* plants but only a single banyan tree will huge canopy

The following inference could be made

(i) Population density of banyan is low

(ii) Population cover area of banyan to high

In this example percentage of cover of biomass is more meaningful than population size

47 **(d)**

During short period of time, some population produce many offsprings, which require little care. Therefore, these populations usually have a survivorship curve similar to type-III. These tend to have J-shaped growth curves until some environmental changes causes them to deceive usually with in a short time. These are generally opportunist species and represent the pioneer species of new and distributed habitat

48 **(a)**

For a normal distribution, the mean, median and mode are actually equivalent.

49 **(a)**

When the external temperature is lower, some ectochermal animal become inactive to cope temperature *e.g.*, frog, shake. However, very low temperature can kill such animals due to inactivation of enzymes. Therefore, the animal goes hibernation. It is the winter sleep under ground

50 **(d)**

The most important elements that lead to so much variation are temperature, water, light, soil. Physio-chemical components alone do not characterize the habitat of an organism completely. It includes biotic factors also. So for characterization of habitat both abiotic and biotic components are needed