

## Questionbank Biology

**Unit-X****Chapter-13. Organism and population****IMPORTANT POINTS**

- Ecology : The study of organism where they live
- Ecology is divided in many branches, population ecology is one of them
- Environment : Study of our surrounding factors and their interaction
- Organisms where they live is known as habitat
- They live in fresh water ponds, sea, estuarine region and on land. Each habitat has its own characteristics.
- Population : Group of organisms of same species living in same habitat at a species period.
- Different organisms of a population interacts differently. It may be interspecific
- It consists of species, variations, constituents and succession.
- Biotic community is affected by biotic and abiotic factors.
- characteristics of population : Density, mortality, age distribution, population equilibrium, population interaction.
- Organism interacts with other organism in different ways (1) mutualism (2) competition (3) predation (4) commensalism

1. What is true for the following statements ?

Statement X : Migration of birds is influenced by light.

Statement Y : Reproduction of birds is influenced by light.

Statement Z : In all birds gonads are activated due to increase in intensity of light during summer.

- |     | X     | Y     | Z     |
|-----|-------|-------|-------|
| (a) | True  | False | False |
| (b) | False | True  | False |
| (c) | True  | True  | True  |
| (d) | True  | True  | False |

2. What is true for the given statements ?

Statement X : Birds and Mammals obtain greater body size in cold region than in warm regions.

Statement Y : Birds and Mammals are Homeothermic (warm blooded) animals.

Statement Z : Reptiles are smaller in cold region.

- |     |      |       |       |
|-----|------|-------|-------|
| (a) | True | False | True  |
| (b) | True | True  | False |



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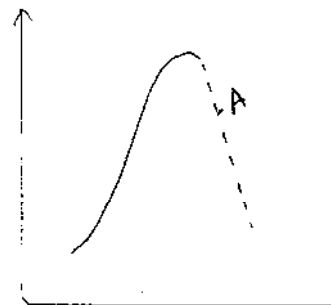
**Graph**

10. Crustacian Astacus = Green land  
Marine turtle  
what is 'X' according to the information given ?  
(a) Salt gland (b) Kidney  
(c) None of these (d) chlorine secretory cells
11. Which of the following is correct statement ?  
(a) uromatrix lizard stores water in the intestine  
(b) Camel stores water in its stomach  
(c) Anabus develops accessory respiratory organs to respire in water.  
(d) Kangaroo rat undergoes hibernation.
12. Parasitic animal which is part of bio-geo community and included as zoo planktons and mesofauna of terrestrial ecosystem is ....  
(a) Moles (b) mites (c) Earthworms (d) leech
13. From the given option which is the appropriate for ecto parasite animal Ascaris, Tapeworm, Plasmodium, mites  
(a) phytoplanktons (b) mesofauna  
(c) macrofauna (d) phytoplanktons and mesofauna.
14. Which living organism is seen in the hot water spring having temperature more than 100°C ..  
(a) Methanogens (b) Thermoacidophiles  
(c) Helophytes (d) spirochete
15. Find out population density.  
Since last 4 years number of lions in a square forest is 500 (length of forest = 10 km)  
(a) 1.25 lions/year . k meter<sup>2</sup> (b) 12.5 lions/ k meter<sup>2</sup> - year  
(c) 1.025 lions/ cm<sup>2</sup> month (d) 12.5 lions/ k meter<sup>2</sup> - month
16. Average human population in a certain time area is 5000 in which 1111 children are produced during an year, find out the birth rate ?  
(a) 0.1111 (b) 0.3333 (c) 0.2222 (d) 0.4444
17. In birthrate and deathrate is equal, then what will be the Vital Index ?  
(a) = 1 (b) = 100 (c) >100 (d) <100
18. Which option is correct for the given statement .  
Statement X : Density dependent factors are intrinsic Reason R : They are generated in population only  
(a) Both statement are true  
(b) Both statement are false  
(c) X is true, y is false  
(d) X is false, Y is true

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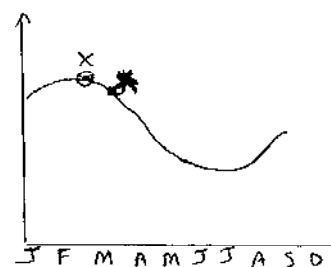
19. In a population of frog 'J' type of population growth curve is seen than which information from the given graph can be true for "point A"

- (i) Vital Index  $< 100$   
 (ii) Birth rate  $<$  death rate  
 (iii) Birth rate  $>$  death rate  
 (a) I  
 (b) II, III  
 (c) I, III  
 (d) I, II



20. The given graph shows seasonal changes in the population of Birds of Gujarat in the year 2002. In the given graph what is true for point X?

- (a) Vital Index  $< 100$   
 (b) Vital Index  $> 100$   
 (c) Vital Index = 100  
 (d) None of these

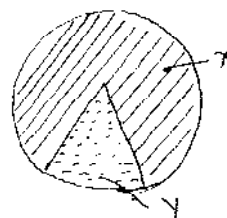


21. Producers  $\rightarrow$  Decomposers  $\rightarrow$  'X', then what will be 'X'?

- (a) Nostoc  
 (b) Fungi  
 (c) Both of these  
 (d) None of these

22. In given chart, what is the problem seen in living organism staying in 'X' denoted area?

- (a) endosmosis  
 (b) exosmosis  
 (c) a & b both  
 (d) getting water and maintaining it.



23. What is correct for the given statement?

Statement P: Environmental study is linked with ecology

Statement Q: Ecology is included in environmental study.

- (a) Both statement are true  
 (b) Both statement are wrong  
 (c) P is right and Q is wrong  
 (d) P is wrong and Q is right

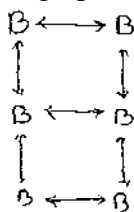
24. What is the vital Index, if Birth rate is 0 and Death rate = 5?

- (a) 0            (b) 100  
 (c) 1            (d) None of these

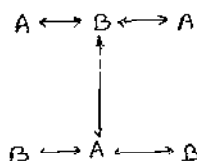
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25. If the Birth rate is 10 and death rate is 0 then what is VITAL INDEX ?  
 (a) 0      (b) 100      (c)  $\alpha$  Infnative      (d) 1
26. Which is appropriate for the following statement ?  
 Statement X : Pacific salmon fish reproduces only once in its life time.  
 Statement Y : In a reproductive season it lays 2,80,000,000 eggs.  
 X                  Y  
 (a) True      True  
 (b) False      False  
 (c) True      False  
 (d) False      True
27. Mycobiont Supplies X to phycobiont and phycobiont supplies Y to mycobiont, then what is true for X and Y ?  
 (a) X : Mineral element ; Y : Habitat  
 (b) X : organic nutrients ; Y : Inorganic Nutrient  
 (c) X : Habitat                  Y : protection  
 (d) X : Minerals                  Y : organic nutrients
28. A plant formed by the combination of algae and fungi is a pioneer of which type of succession ?  
 (a) Xerosere      (b) Hydrosere      (c) Mesosere      (d) None of these
29.  $Y \leftrightarrow X$  having interspecific relations in which animal which is not affected is X shows excretory orgndds which are also seen in Y and is Z located in its gills then.... what are X,Y,Z - ?  
 (a) X = Termite                  (b) X = shank  
     Y = flagelates                  Y = Tortoise  
     Z = Tentacles                  Z = Chlorine cell  
 (c) X = shank                  (d) All of these (above)  
     Y = fish  
     Z = chlorine secreting cells

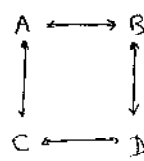
30. what does the given graph shows



(i)



(ii)

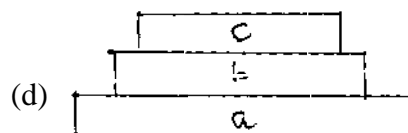
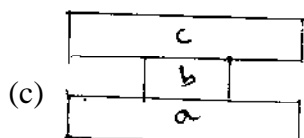
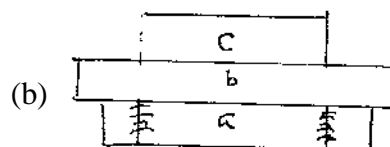
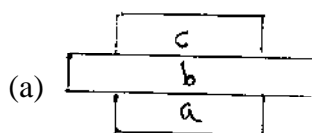
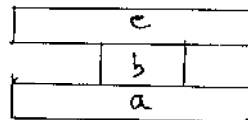


(iii)

- (a) (i) Community Ecology                  (b) (i) Population Ecology  
 (ii) Population Ecology                  (ii) Community Ecology  
 (iii) Population Ecology                  (iii) Ecosystem Ecology
- (c) (i) Population Ecology                  (d) None of these  
 (ii) Community Ecology  
 (iii) Community Ecology

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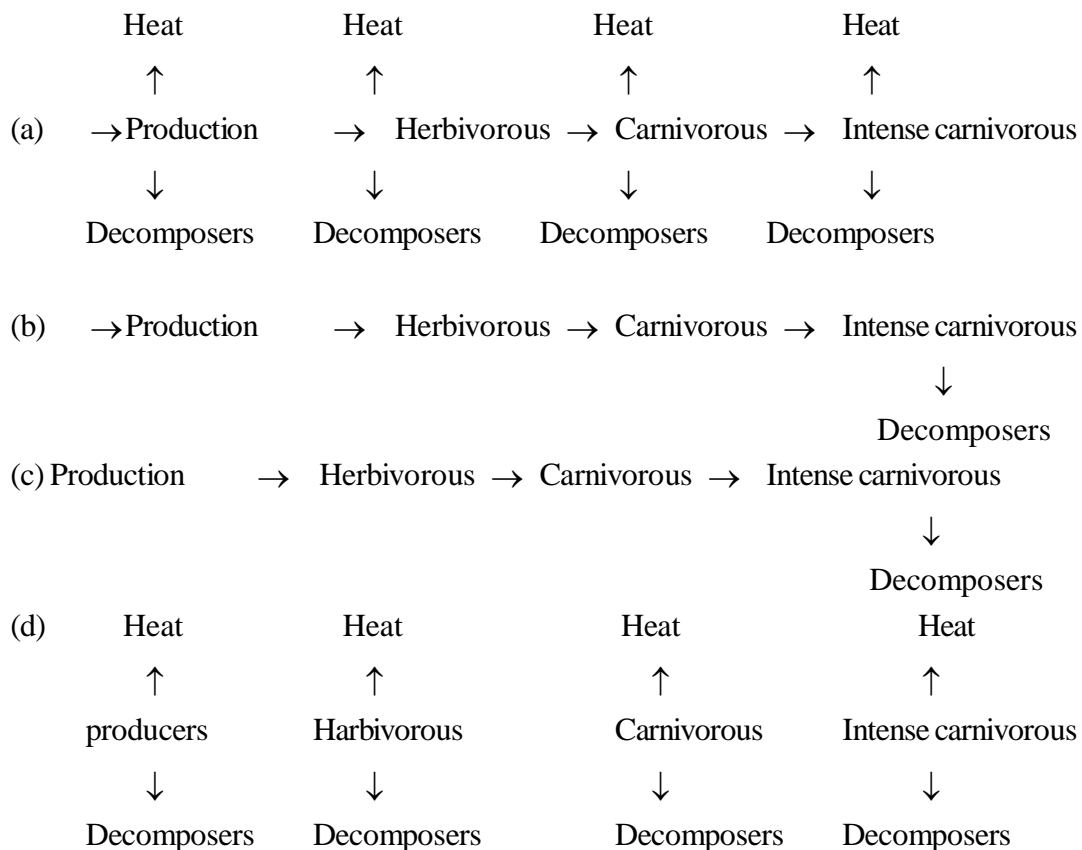
31. In a population of salmon fish, potential Natality is 10,000 while realised mortality is 200, then the Vital Index =  
 (a) 50, (b) less than 50 (c) more than 50 (d) None of these
32. Which of the following is not possible in ecosystem where microflora is absent  
 (a) Photosynthesis (b) Decomposition (c) Assimilation (d) None of these
33. If marine fish is kept in fresh water, will it survive  
 (a) Yes, If chlorine cells are placed in its kidney  
 (b) Yes, If chlorine cells are placed in its green gland  
 (c) No, Because it can not adapt  
 (d) No, they can not survive but of young ones hatching out of their eggs can survive
34. What is true for both the organism showing interspecific competition ?  
 (a) Both are benefited  
 (b) more or less harmful effect to both  
 (c) one is benefited where as other is at loss  
 (d) None of these
35. If at "t" time population density is N, then what is the equation for the population density at (t+1) time ?  
 (a)  $N(t+1) = Nt - [CD+E] - [B+I]$   
 (b)  $N(t+1) = Nt+B+I-D-E$   
 (c)  $N(t+1) = Nt+(B+I)-(D+E)$   
 (d) All of these
36. Write appropriate option for antibiosis  
 (a) Penicillium fungi and certain gram +ve bacteria  
 (b) Penicillium fungi and certain gram -ve bacteria  
 (c) Spirocheate and fermicutes  
 (d) None of these
37. The graph of age related distribution in a village is as following If during 1 year potential mortality = realized mortality, then which type of graph is seen after 1 year ?



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38. What is true with the respect to energy flow ?

**Figure**



39. In which subdivision of aquatic ecosystem thermal stratification is seen ?

- (a) marine (b) deep fresh water habitat  
(c) marine and fresh water area (d) None of these

40. In which of the following aquatic ecosystems habitat fluid (liquid) is very concentrated compared to body fluid ?

- (a) Marine (b) Esturine (c) Riverine (d) pond.

41. Which of the following is true with reference to temperature difference ?

- (a) 1. Terrestrial Habitat > Aquatic Habitat  
2. Sea < Deep fresh water lakes  
(b) 1. Aquatic Habitat > Terrestrial Habitat  
2. Sea < Deep fresh water lake  
(c) 1. Terrestrial Habitat = Aquatic Habitat  
2. Sea < Deep fresh water lake  
(d) 1. Terrestrial Habitat < Aquatic Habitat  
2. Sea = Deep fresh water lake

42. Water holding capacity of land depends on ?

- (a) Soil composition (b) Grain size  
(c) Aggregation of grain (d) All of these





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50. Increase and decrease in a population in one of the places in USA, because of sandy cyclone is given below.

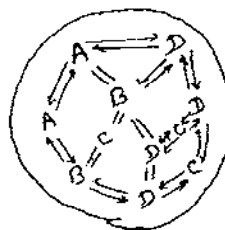
Which type of graph is possible for total no. of individuals in a population v/s month ?

Month	Birth rate	Imigration	Death	Emigration
July	40	100	30	20
August	100	200	50	45
September	200	800	100	10
October	100	--	5000	3000

- (a) S. Shaped (c) irrupative  
 (b) J. Shaped (d) None of these
51. Hygroscopic skin is seen in.....  
 (a) Kangaroo rat (b) Uromatrix  
 (c) Spiny tailed lizard (d) Camel
52. What is true for marine animals ?  
 (a) Because of exosmosis they drink sea water  
 (b) As they drink sea water exosmosis occurs  
 (c) Because of exosmosis body fluid become hypotonic, so they drink sea water  
 (d) None of these
53. In order to find out VITAL INDEX in Rampur Village, following information was gathered  
 Death Rate =  $1/x$  Birth Rate =  $z$   
 Average population =  $1/y$   
 What is the Vital Index ?  
 (a)  $xyz \times 100$  (b)  $z/xy = 100$   
 (c)  $xy/z \times 100$  (d)  $100/xyz$

54. What is the true for the community ecology diagram ?

- (a) Involvement of 4 individuls of a population  
 (b) Involvement of 4 population of a species  
 (c) Involvement of 4 species of a community  
 (d) Involvement of 4 speces of 4 ecosystem

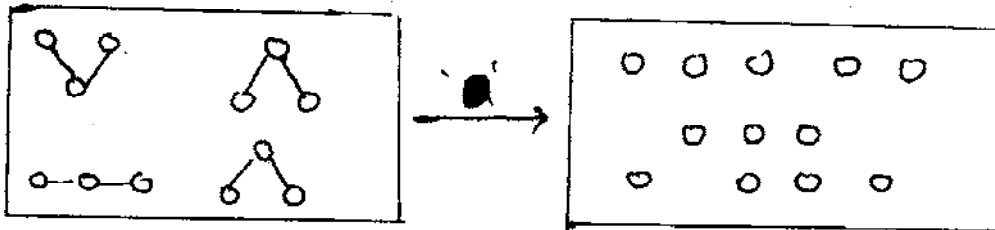


55. Match the column I with column II

- | Column I          | Column II                      |
|-------------------|--------------------------------|
| (1) Astacus       | (p) Hydrophiic skin            |
| (2) Marine turtle | (q) green gland                |
| (3) Spiny lizard  | (r) water storage in intestine |
| (4) Uromatrix     | (s) salt glands                |
- (a) (1-q), (2-s), (3-p) (4-r) (b) (1-s), (2-q), (3-p) (4-r)  
 (c) (1-s), (2-p), (3-q) (4-r) (d) (1-p), (2-q), (3-s) (4-r)

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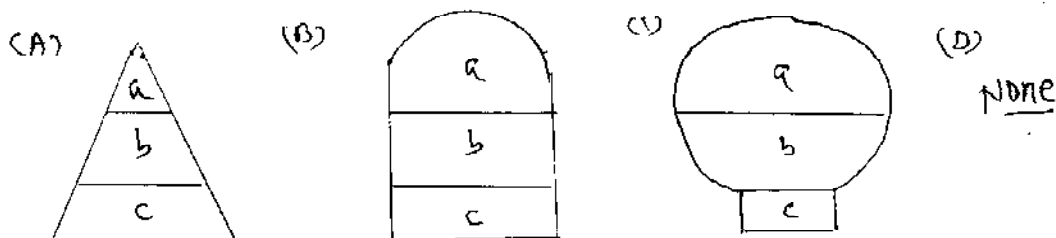
56. Which of the following is incorrect if 'O' sign is used for beneficial and '+' sign for harmful ?
- Penicillium <--> Gram +ve bacteria ; Penicillium: '+'
  - Rhizobium <---> plant - leguminosae family : Both 'O'
  - Tiger <--> Rabbit ; Tiger : 'O'
  - Shank fish <---> Suckerfish ; Suckerfish ; 'O'
57. What will happen if 'X' which is related to this reaction is absent ?



- Decomposition, essential process like death, will stop
  - Damage to ecosystem
  - Begining of the food chain is not possible
  - All the statements given are correct
58. In the section of lichen which layer is seen just below "upper cortex"
- Medulla
  - Algal layer
  - lowercortex
  - All of these
59. What is true for the given statements ?  
Statement X : Protopterus aestivate during winter to overcome dry period Statement Y : The process of aestivation in protopterus is to overcome unfavourable condition
- Both statements are true
  - X-Correct Y- wrong
  - Both statements are wrong
  - X- wrong Y- correct
60. What is true for the given statement ?  
Statement X : Most of the animals and almost all the plants cannot keep up their internal enviornment constant  
Statement Y : process of osmoregulation in plants is an example of this
- Both statements are true
  - X - correct, Y- wrong
  - Both statements are wrong
  - X- wrong, Y- correct

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61. which type of pyramid is true for the population having more number of pre reproductive and re productive age group ?



a = post reproductive age group

b = reproductive age group

c = pre reproductive age group

62. X= Arthropods, Y = Mollusca, z = Coelenterates :-If the X by using Y, lives beneficial life with z, then which of the following is correct example ?

- (a) X = cockroach Y = pearl oyester Z = Hydra  
 (b) X = Millipede Y = pila Z = jellyfish  
 (c) X = Hermit crab Y = Gastropoda Z = sea anenone  
 (d) All of these

63. From the given option find out the correct pair ?

- (a) Mesofauna - Earthworm  
 (b) Macrofauna - spider  
 (c) Microfauna - fungi  
 (d) None of these

64. Match column I with column II

**Column - I**

1. Mutualism  
 2. Competition  
 3. Predation  
 4. Parasitism

**Column - II**

- (p) Barnacles  
 (q) Tiger  
 (r) Mites  
 (s) Sea anemone

- (a) (1-s), (2-r), (3-p) (4-q) (b) (1-r), (2-s), (3-q) (4-p)  
 (c) (1-s), (2-p), (3-q) (4-r) (d) (1-q), (2-r), (3-s) (4-p)

65. Give correct option for the given true and false statements

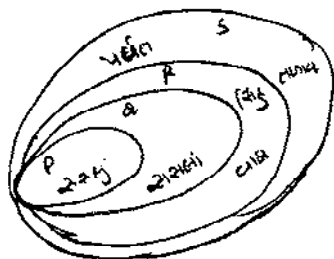
- (i) Some insects, birds and mammals living in warm and dry climate have more darker black pigments than the races of same species living in cold and humid climate.  
 (ii) Temperature variation is much lesser in aquatic habitat compared to terrestrial habitat  
 (iii) In deep fresh water lakes, there is gradual increase in temperature from surface to the bottom  
 (iv) In an aquatic habitat production increases with insing depth.

(T = True, F = False)

- (a) FFFF (b) TFTF (c) TTFT (d) FTFT


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66. 'X' is an example of Mutualism and 'Y' is an example of succession then which is the correct relationship ?
- (a) X = Hermit Crab                      Y = Gastropod  
 (b) X = Sea anemone                      Y = mesosere Succession  
 (c) X = Lichen                              Y = Xerosere  
 (d) X = Lichen                              Y = Hydrosere
67. At 't' time, population density is 'N' and at t+1 time population density is  $N_{t+1}$  / If  $N_{t+1} - N_t$  then find out the correct option
- (a)  $B-D + I-E \neq 0$                       (b)  $B-D+I-E = 0$   
 (c)  $B+D-I+E +0$                       (d)  $B+D-I+E \neq 0$
68. Find out correct option P,Q,R,S, from the given diagram



- |     | P                | Q                | R                | S                |
|-----|------------------|------------------|------------------|------------------|
| (a) | population       | organism         | Ecosystem        | Biotic community |
| (b) | Organism         | population       | Biotic community | Ecosystem        |
| (c) | Ecosystem        | Biotic community | population       | Species          |
| (d) | Biotic community | Ecosystem        | Species          | population       |
69. Which of the following is not included as the climax community of general process of succession ?
- (a) Sedge-meadow stage                      (b) phytoplanktones  
 (c) Forest                                      (d) Grassland
70. How many sq. km. area of biosphere is occupied by marine habitat. ?
- (a) 3,62,000,000                      (b) 36 crore 20 lacs  
 (c) 36,20 Million                      (d) all of these
71. What percentage of earth is occupied by marine habitat ?
- (1) 71%    (2) 4 %    (3) 67%    (4) 29%
- (a) 1,2                      (b) 2,3                      (c) 1,4                      (d) 1
72. What is the composition of soil with high waterlogging capacity ?
- (a) Sandy soil                      (b) Black soil (loan soil)  
 (c) Rocky soil                      (d) Any one of these
73. Recently a village was badly affected by jaundice and Dengue, which of the following will decrease due to this ?
- (a) No. of persons                      (b) area                      (c) Birthrate                      (d) Death rate

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74. Which is related to the given statement ?  
In the begining of summer crow and koel lays eggs.  
(a) As the light intensity decrease reproductive organs become active  
(b) In some Birds increase or decrease in intensity of hight- makers reproductive organs active or inactive respecctivity  
(c) with increase in temperture, gonads become active  
(d) None of these
75. Population of CBM Village year wise .....
- |                  |  |
|------------------|--|
| 2000 -----> 1000 |  |
| 2005 -----> 400  |  |
| 2010 -----> 600  |  |
| 2012 -----> 800  |  |
- what will be the appropri/ate graph for this ?
- (a)  (b) Irruptive  
(c) 'S' shaped (d) J shaped
76. What is correct for the given statement ?  
Statement X : Ascaris are permanent parasites  
Statement Y : Ascaris lives inside the host's body  
(a) Both X&Y are correct (c) X is wrong Y is true  
(b) Both x & Y are wrong (d) X is correct & Y is true
77. Depending on the study of bird population in diffrent areas of North Gujarat for last 10 years (2000 -2010) In which month population of bird is least ?  
(a) February (b) September (c) April (d) October
78. Which is the correct option for the given table ?write 'T' if the given ecample is correct and 'F' for wrong example
- | Information                            | Example                    |
|--|----------------------------|
| Breed only once                        | Bamboo                     |
| Breeds many time                       | Birds like pigeon, Mammals |
| Small sized but many offsprings        | Pray Birds                 |
| less in number but big size offsprings | Only deep marine shishes   |
- (a) TFTF (b) TTFF (c) FFTT (d) TFFF
79. Biological control as pest control in agriculture is an example of .....
- (a) Predation (b) Competition (c) Emigration (d) diseases
80. The turtle of Galapagus island and the goats living there both were eating tender grass, state the relationship.  
(a) Interspecific competition (b) Emigration  
(c) predation (d) None of these

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81. carrying capacity of a population is determined by (BHU 2001)
- (a) Birth rate
  - (b) Death rate
  - (c) limiting resources
  - (d) Reproductive ability ...
82. Biotic community means... [CBSC, PMT - 2001]
- (a) Group of Birds
  - (b) Group of species
  - (c) Group of interrelated population
  - (d) Groups of interrelated ecosystem
83. What is true for the members of same species [CBSC, PMT - 2002]
- (a) Capacity of inter breeding
  - (b) shows same ecological niche
  - (c) show different type of ecological niche
  - (d) They have different Habitat

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**ANSWER KEY**

1 (a)	26 (c)	51(c)	76 (a)
2 (d)	27 (d)	52 (a)	77 (b)
3 (b)	28 (a)	53 (a)	78 (b)
4 (c)	29 (c)	54 (c)	79 (a)
5 (d)	30 (c)	55 (a)	80 (a)
6 (b)	31 (b)	56 (a)	81 (c)
7 (c)	32 (d)	57 (d)	82(c)
8 (d)	33 (c)	58 (d)	83 (a)
9 (b)	34 (b)	59 (d)	
10 (b)	35 (d)	60 (a)	
11 (c)	36 (a)	61 (b)	
12 (b)	37 (d)	62 (c)	
13 (c)	38 (d)	63 (c)	
14 (b)	39 (b)	64 (c)	
15 (a)	40 (a)	65 (d)	
16 (c)	41(a)	66 (c)	
17 (b)	42 (d)	67 (b)	
18 (a)	43 (a)	68 (b)	
19 (d)	44 (a)	69 (b)	
20 (d)	45 (c)	70 (d)	
21 (d)	46 (d)	71 (d)	
22 (c)	47 (d)	72 (b)	
23 (a)	48 (a)	73 (a)	
24 (a)	49 (b)	74 (c)	
25(c)	50 (b)	75 (b)	

