CHAPTER 5

Organisms and Populations

Major Biomes, Abiotic Factors and Responses to Abiotic Factors

1. Niche is: *(2018)*

a. All the biological factors in the organism environment
b. The physical space where an organism live
c. The range of temperature that the organism needs to live
d. The functional role played by the organism where it lives

2. Most animals are tree dwellers in a: **[OS]***(2015)*

a. Temperature deciduous forest
b. Tropical rain forest
c. Coniferous forest
d. Thorn woodland

3. Just as a person moving from Delhi to Shimla to escape the heat for the duration of hot summer, thousands of migratory birds from Siberia and other extremely cold northern regions move to: **[OS]***(2014)*

a. Keolado National Park
b. Western Ghat
c. Meghalaya
d. Corbett National Park

Adaptations

4. Match List-I with List-II:

List-I		List-II	
(A)	Allen's Rule	(i)	Kangaroo rat
(B)	Physiological adaptation	(ii)	Desert lizard
(C)	Behavioural adaptation	(iii)	Marine fish at depth
(D)	Biochemical adaptation	(iv)	Polar seal

Choose the correct answer from the options given below. *(2021)*

a.	A-iv	B-i	C-iii	D-ii
b.	A-iv	B-i	C-ii	D-iii
c.	A-iv	B-iii	C-ii	D-i
d.	A-iv	B-ii	C-iii	D-i

5. Assertion (A): A person goes to high altitude and experiences 'altitude sickness' with symptoms like breathing difficulty and heart palpitations.

Reason (R): Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen.

In the light of the above statements, choose the correct answer from the options given below. *(2021)*

a. Both (A) and (R) are true but (R) is not the correct explanation of (A)
b. (A) is true but (R) is false
c. (A) is false but (R) is true
d. Both (A) and (R) are true and (R) is the correct explanation of (A)

6. Plants which produce characteristic pneumatophores and show vivipary belong to: **[OS]***(2017-Delhi)*

a. Mesophytes
b. Halophytes
c. Psammophytes
d. Hydrophytes

7. It is much easier for a small animal to run uphill than for a large animal, because: *(2016 - I)*

a. It is easier to carry a small body weight
b. Smaller animals have a higher metabolic rate
c. Smaller animals have a lower O_2 requirement
d. The efficiency of muscles in large animals is less than in the small animals

8. Which of the following are likely to be present in deep sea water? *(2014)*

a. Saprophytic fungi
b. Archaebacteria
c. Eubacteria
d. Blue-green algae

Population Attributes, Population Growth and Life History Variation

9. If '8' *Drosophila* in a laboratory population of '80' died during a week, the death rate in the population is _____ individuals per *Drosophila* per week. *(2022)*

a. Zero
b. 0.1
c. 10
d. 1.0

10. In the exponential growth equation *(2021)*

$N_t = N_o e^{rt}$, e represents:

a. The base of exponential logarithms
b. The base of natural logarithms
c. The base of geometric logarithms
d. The base of number logarithms

11. Which of the following is not an attribute of a population? *(2020)*

a. Natality
b. Mortality
c. Species interaction
d. Sex ratio

12. The impact of immigration on population density is: *(2020-Covid)*

a. Both positive and negative
b. Neutralized by natality
c. Positive
d. Negative

13. Natality refers to: *(2018)*

a. Death rate
b. Birth rate
c. Number of individuals leaving the habitat
d. Number of individuals entering a habitat

14. In a growing population of a country: *(2018)*

a. Pre-reproductive individuals are more than the reproductive individuals.
b. Reproductive individuals are less than the post-reproductive individuals.
c. Reproductive and pre-reproductive individuals are equal in number.
d. Pre-reproductive individuals are less than the reproductive individuals.

15. Asymptote in a logistic growth curve is obtained when: *(2017-Delhi)*

a. The value of 'r' approaches zero
b. K = N
c. K > N
d. K < N

16. When does the growth rate of a population following the logistic model equal zero? The logistic model is given as dN/dt = rN (1-N/K): *(2016 - I)*

a. When N/K is exactly one
b. When N nears the carrying capacity of the habitat
c. When N/K equals zero
d. When death rate is greater than birth rate

17. Which of the following is correct for r-selected species? *(2016 - II)*

a. Small number of progeny with small size
b. Small number of progeny with large size
c. Large number of progeny with small size
d. Large number of progeny with large size

18. A biologist studied the population of rats in a barn. He found that the average natality was 250, average mortality 240, immigration 20 and emigration 30. The net increase in population is: *(2013)*

a. Zero
b. 10
c. 15
d. 05

Population Interactions

19. While explaining interspecific interaction of population, (+) sign is assigned for beneficial interaction, (–) sign is assigned for detrimental interaction and (0) for neutral interaction. Which of the following interactions can be assigned (+) for one species and (–) for another species involved in the interaction?

a. Competition
b. Predation
c. Amensalism
d. Commensalism

20. Which one of the following statements cannot be connected to Predation? *(2022)*

a. It is necessitated by nature to maintain the ecological balance
b. It helps in maintaining species diversity in a community
c. It might lead to extinction of a species
d. Both the interacting species are negatively impacted

21. Inspite of interspecific competition in nature, which mechanism the competing species might have evolved for their survival? *(2021)*

a. Competitive release
b. Mutualism
c. Predation
d. Resource Partitioning

22. Amensalism can be represented as: *(2021)*

a. Species A (+) ; Species B (+)
b. Species A (-) ; Species B (-)
c. Species A (+) ; Species B (0)
d. Species A (-) : Species B (0)

23. Match the items in Column-I with those in Column-II: *(2020-Covid)*

	Column-I		Column-II
1.	Herbivores-Plants	(i)	Commensalism
2.	Mycorrhiza-Plants	(ii)	Mutualism
3.	Sheep-Cattle	(iii)	Predation
4.	Orchid-Tree	(iv)	Competition

	(1)	(2)	(3)	(4)
a.	(iii)	(ii)	(iv)	(i)
b.	(ii)	(i)	(iii)	(iv)
c.	(i)	(iii)	(iv)	(ii)
d.	(iv)	(ii)	(i)	(iii)

24. Match Column-I with Column-II *(2019)*

Column-I		Column-II	
A.	Saprophyte	i.	Symbiotic association of fungi with plant roots
B.	Parasite	ii.	Decomposition of dead organic materials
C.	Lichens	iii.	Living on plants or animals
D.	Mycorrhiza	iv.	Symbiotic association of algae and fungi

Choose the correct answer from the option given below

	(A)	(B)	(C)	(D)
a.	(i)	(ii)	(iii)	(iv)
b.	(iii)	(ii)	(i)	(iv)
c.	(ii)	(i)	(iii)	(iv)
d.	(ii)	(iii)	(iv)	(i)

25. Which one of the following plants shows a very close relationship with a species of moth, where none of the two can complete its life cycle without the other? *(2018)*

a. *Hydrilla* b. *Yucca*
c. Banana d. *Viola*

26. Which one of the following population interactions is widely used in medical science for the production of antibiotics? *(2018)*

a. Commensalism b. Mutualism
c. Parasitism d. Amensalism

27. Mycorrhizae are the example of: *(2017-Delhi)*

a. Fungistasis b. Amensalism
c. Antibiosis d. Mutualism

28. The principle of competitive exclusion was stated by: *(2016 - II)*

a. MacArthur b. Verhulst and Pearl
c. C.Darwin d. G.F. Gause

29. If '+' sign is assigned to beneficial interaction, '–' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+' '–' refers to: *(2016 - II)*

a. Commensalism b. Parasitism
c. Mutualism d. Amensalism

30. Gause's principle of competitive exclusion states that: *(2016 - I)*

a. More abundant species will exclude the less abundant species through competition
b. Competition for the same resources excludes species having different food preferences
c. No two species can occupy the same niche indefinitely for the same limiting resources
d. Larger organisms exclude smaller ones through competition

31. In which of the following interactions both partners are adversely affected? *(2015 Re)*

a. Predation b. Parasitism
c. Mutualism d. Competition

32. A sedentary sea anemone gets attached to the shell lining of hermit crab. The association is: **[OS]***(2013)*

a. Amensalism b. Ectoparasitism
c. Symbiosis d. Commensalism

Answer Key

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
d	b	a	b	d	b	b	b	b	b	c	c	b	a	b	a	c
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32		
a	b	d	d	d	a	d	b	d	d	d	b	c	d	d		