	INDIAN SCHOOL AL WADI AL KABIR	
Class: XII	**Department: SCIENCE 2021 – 22** **SUBJECT : BIOLOGY**	**Date of submission:** **13.02.2022**
Worksheet No: 10 **WS WITH ANS.**	**UNIT: ECOLOGY** **Chapter: ORGANISMS AND POPULATIONS**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

TWO MARK QUESTIONS

1. Write any two reasons for the formation of major biomes.
2. Desert plants can do photosynthesis even though their stomata remain closed during day time. Give reason.
3. Give any one example of brood parasitism.
4. Mention the adaptations the mammals of colder areas have.
5. When does a population growth curve assume J-shape?

THREE MARK QUESTIONS

6. What are the two forms of population growth? Explain.
7. Water is very essential for life. Write any three features for plants and animals which enable them to survive in water scarce environment.
8. Write the importance of measuring the size of a population in a habitat or an ecosystem.
9. While living in and on the host species, the animal parasite has evolved certain adaptations. Give examples.
10. Climbers are vascular plants rooted in the ground and maintain erectness of their stem making use of other plants. Discuss the type of association between that type of climbers and host plants.

FIVE MARK QUESTIONS

11. (a) List any four abiotic components that lead to variations in the physical and chemical conditions of different habitats.
    (b) Explain the impact of these components on the distribution of organisms in different habitats.
12. (a) List any three ways of measuring population density of a habitat.

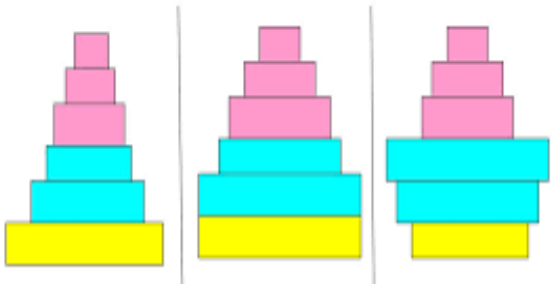
(b) Mention the essential information that can be obtained by studying the population density of an organism

13. (a) Write the adaptations present in the following cases:
    (i) *Opuntia*
    (ii) Seals
    (iii) Archaebacteria
    (iv) Marine invertebrates in deep ocean
    (v) Desert lizard
    (vi) Humans going to high altitude

    (b) Identify the type of interaction mentioned in the following examples and give another example for each one.
    (i) The cattle egret and grazing cattle
    (ii) Fungi and roots of higher plants

PREVIOUS BOARD QUESTIONS

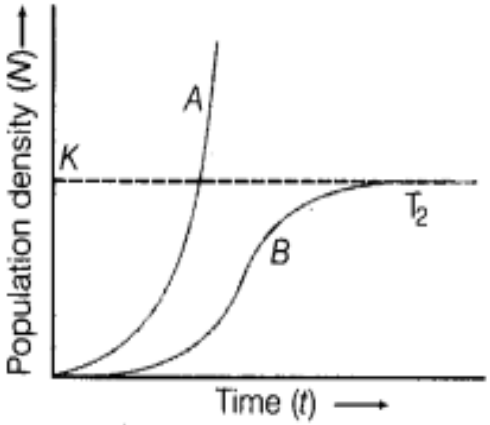
14. List the different ways by which organisms cope or manage with abiotic stresses in nature. Explain any three ways listed.
15. (a) Why are herbivores considered similar to predators in the ecological context? Explain.
    (b) Differentiate between the following interspecific interactions in a population?
    (i) Mutualism & competition (ii) commensalism & amensalism
16. A population of *Paramecium* was grown in a culture medium. After 5 days the culture medium became overcrowded and had depleted nutrients. What will happen to the population and what type of growth curve will the population attain? Draw the growth curve.
17. (a)Explain the birth rate in a population by taking a suitable example.
    (b) Write the other two characteristics which only a population shows but an individual cannot.
18. Mr. Ram on a trip to Rohtang Pass Suddenly experienced heart palpitations, nausea, fatigue etc. on reaching the destination. Suggest the reasons for his sudden deterioration of health and also state whether his body will withstand this problem if he stays there for long and how?
19. Study the age pyramids, A, B and C of the human population given below and answer the questions that follow



A B C

(a) Identify pyramids 'B' and 'C'
(b) Write the basis on which the above pyramids are plotted

20. Study the population growth curve given below and answer the questions that follow



(a) Identify 'A' and 'B' shown in the graph
(b) When and why do such curves occur in a population?

Hints and solution

Qn. No.	**2 MARKS QUESTIONS**	**Marks**
1	Annual variations in the intensity and duration of temperature together with annual variation in precipitation (both rain and snow) account for the formation of major biomes.	2
2	Physiological adaptation – CAM pathway	2
3	Cuckoo bird and crow - explanation	2
4	Allen's rule, blubbers	2
5	Unlimited resources and lack of competition	2
	3 MARKS QUESTIONS	
6	Exponential and logistic growth models – explanation, equations and graph	3
7	Plants – spines, deep tap root system, sunken stomata, CAM pathway Animals – special respiratory pathway, concentrated urine, presence of hump	3
8	The size of the population tells us a lot about its status in the habitat. Whatever ecological processes we wish to investigate in a population, be it the outcome of competition with another species, the impact of a predator or the effect of a pesticide application, measure of population density is important	3
9	Loss of unnecessary sense organs, presence of adhesive organs or suckers to cling on to the host, loss of digestive system and high reproductive capacity	3
10	Commensalism - explanation	3
	5 MARKS QUESTIONS	
11	(a) Temperature, light, water and soil	3

	(b) Explanation	
12	(a) Counting number, percentage of cover, relative density and indirect method – explanation **(b)** Refer qn 8	5
13	*(a) Opuntia* – Physiological, morphological and anatomical (b) Seals - blubbers (c) Archaebacteria - biochemical (d) Marine invertebrates in deep ocean - biochemical (e) Desert lizard - behavioural (f) Humans going to high altitude – physiological (B) Commensalism and mutualism	5
	Previous Board Questions	
14	Regulate, conformers, migrate and suspend - explanation	5
15	(a) Herbivores feed on plants (b) Mutualism and competition; commensalism and ammensalism – differences in table form	5
16	Initial growth is exponential and J shaped curve, then sharp decline due to lack of nutrients	3
17	17 (a) If in a pond there are 20 lotus plants last year and through reproduction 8 new plants are added, taking the current population to 28, we calculate the birth rate as 8/20 = 0.4 offspring per lotus per year. (b) Birth rate, death rate, sex ratio and age pyramids	5
18	Explanation of altitude sickness and the physiological adaptations for overcoming it	5
19	(a) B – stable, C – declining (b) Number of pre-reproductive, reproductive and post – reproductive groups	3
20	(a) A – Exponential growth, B – logistic growth (b) Conditions for growth models	3

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