INDIAN SCHOOL DARSAIT
DEPARTMENT OF SCIENCE

Subject : BIOLOGY Topic : Heredity and Evolution Date of Worksheet : 30-11-2017

Resource Person: Mrs. S. SUBHAJA NANDAKUMAR Date : _____

Name of the Student _____ Class & Division : X Div _ Roll Number : ___

1)	Define dominant and recessive trait.	1
2)	Expand DNA? State the importance of DNA in inheritance.	1
3)	Name an animal in which individuals can change sex. What does this indicate?	1
4)	How is the chromosome number restored in zygote?	1
5)	Give one difference between artificial selection and natural selection.	1
6)	Give the difference between monohybrid and dihybrid ratio.	2
7)	Why are the small numbers of surviving tigers a cause of worry from the points of view of genetics?	2
8)	If a trait A exist in 10% of a population of an asexually reproducing species and a trait B exists in 60% of the same population, which trait is likely to have arisen earlier?	2
9)	Evolution should not be equated with progress. Why?	2
10)	Why are human beings who look so different from each other in terms of size, colour and looks said to belong to the same species?	2
11)	What is evolution and brief the evolutionary significance of the fossil archaeopteryx? State three characteristic to shows that the birds are very closely related to dinosaurs.	3
12)	Explain the mechanism of sex determination in human.	3
13)	Variation is useful for the survival of species overtime but the variants have unequal chances of survival. Explain the statement.	3
14)	A study found that children with light coloured eye are likely to have parents with light-coloured eyes. On this basis, can we say anything about whether the light eye colour trait is dominant or recessive? Why or why not?	3
15)	"Two areas of study namely 'evolution' and 'classification' are interlinked". Justify this statement.	3
16)	With the help of an example justify the following statement:"A trait may be inherited, but may not be expressed".	3
17)	State the three laws of inheritance. In one of his experiments with pea plants Mendel observed that when a pure tall pea plant is crossed with a pure dwarf pea plant, in the first generation, F1 only tall plants appear. (a) What happens to the traits of the dwarf plants in this case? (b) When the F1 generation plants were self-fertilised, he observed that in the plants of second generation, F2 both tall plants and dwarf plants were present. Why it happened? Explain briefly.	3
18)	List three factors that provide evidences in favour of evolution in organisms and state the role of each in brief.	3
19)	What is meant by speciation? List four factors that could lead to speciation. Which of these cannot be a major factor in the speciation of a self-pollinating plant species? Give reason to justify your answer. Explain in brief the role of natural selection and genetic drift in this process.	5
20)	What are fossils? How are they formed? List two methods of determining the age of fossils. Explain in brief the importance of fossils in deciding the evolutionary relationships.	5
21)	(a) Why did Mendel choose garden pea for his experiments? Write two reasons. (b) List two contrasting visible characters of garden pea Mendel used for his experiment. (c) Explain in brief how Mendel interpreted his results to show that the traits may be dominant or recessive.	5