



INDIAN SCHOOL DARSAIT
DEPARTMENT OF SCIENCE



Subject : PHYSICS	<u>HUMAN EYE AND COLOURFUL WORLD</u>	Date of Worksheet : 27.8.17
Resource Person: SUSAN ANIL		Worksheet #2
Name of the Student :	Class & Division : X	Roll Number :

1.	What is the least distance of distinct vision of a normal human eye?	1
2.	State one effect produced by the scattering of light by the atmosphere?	1
3.	Why do different colours deviate through different angles on passing through a prism?	1
4.	Why does the sky appear black instead of blue to an astronaut?	1
5.	A person needs a lens of power -5.5 dioptres for correcting his distant vision. For correcting his near vision he needs a lens of power + 1.5 dioptre. What is the focal length of the lens required for correcting (i) distant vision, and (ii) near vision?	2
6.	The far point of a myopic the person is 80 cm in front of the eye. What is the nature and power of the lens required to correct the problem?	2
7.	The defective near point of an eye is 150 cm. Calculate the power of the correcting convex lens that would correct this defect of vision.	2
8.	A beam of light is allowed to pass through two beakers A and B, containing true solution and a colloidal solution respectively. What do you observe? Name the phenomenon responsible for your observation.	2
9.	Describe an activity to show that the colours of white light splitted by a glass prism can be recombined to get white light by another identical glass prism. Also draw ray diagram to show the recombination of the spectrum of white light.	3
10.	Explain in brief the reason for each of the following : (a) Advanced sun-rise (b) Delayed sun-set (c) Twinkling of stars	3
11.	Why does the sun appear reddish early in the morning? Will this phenomenon be observed by an observer on the moon? Justify your answer with a reason.	3
12.	A student is unable to see clearly the words written on the blackboard placed at a distance of approximately 4m from him. Name the defect of vision the boy is suffering from. Explain the method of correcting this defect. Draw ray diagram for the: (i) Defect of vision and also	5

	(ii) For its correction.	
13.	<p>(a) Write the function of each of the following parts of human eye :Cornea; iris; crystalline lens; ciliary muscles</p> <p>(b) Millions of people of the developing countries of world are suffering from corneal blindness. These persons can be cured by replacing the defective cornea with the cornea of a donated eye. A charitable society of your city has organized a campaign in your neighborhood in order to create awareness about this fact. If you are asked to participate in this mission how would you contribute in this noble cause?</p> <p>(i) State the objective of organizing such campaigns.</p> <p>(ii) List two arguments which you would give to motivate the people to donate their eyes after death.</p> <p>(iii) List two values which are developed in the persons who actively participate and contribute in such programmes.</p>	5
14.	<p>Write the importance of ciliary muscles in the human eye. Name the defect of vision that arises due to gradual weakening of the ciliary muscles in old age. What type of lenses is required by the persons suffering from this defect to see the objects clearly? Akshay, sitting in the last row in his class, could not see clearly the words written on the blackboard. When the teacher noticed it, he announced if any student sitting in the front row could volunteer to exchange his seat with Akshay. Salman immediately agreed to exchange his seat with Akshay. Akshay could now see the words written on the blackboard clearly. The teacher thought it fit to send the message to Akshay's parents advising them to get his eye sight checked. In the context of the above event, answer the following questions:</p> <p>(a) Which defect of vision is Akshay suffering from? Which type of lens is used to correct this defect?</p> <p>(b) State the values displayed by the teacher and Salman. In your opinion, in what way can Akshay express his gratitude towards the teacher and salman?</p>	5
15.	<p>(a) What is dispersion of white light? State its cause.</p> <p>(b) "Rainbow is an example of dispersion of sunlight." Justify this statement by explaining, with the help of a labeled diagram, the formation of a rainbow in the sky. List two essential conditions for observing a rainbow.</p>	5