



# KJB SCIENCE SCHOOL

A PREMIER INSTITUTE OF EDUCATION

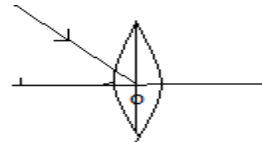
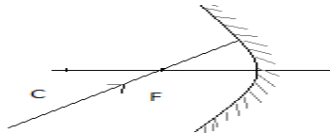
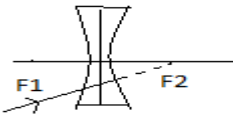
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TEST - {PHYSICS : X } :- CHAPTER:- HUMAN EYE & COLOURFUL WORLD [set---A] M.M:-50

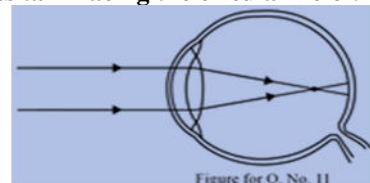
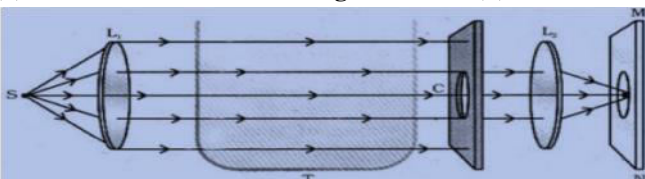
**Dheeraj Asnani –99% {SECOND TOPPER OF AGRA DISTRICT}**

Kashish Goyal -99    Astha Nigam-98    Nidhi Saraswat-98    Siddesh Tripathi-98    Nikita Saraswat-97  
Saurabh Lalwani-97    Sweta Sikarwar-97    Rishabh Singh- 96    Ishu Yadav-96    Srijan Mehta -- 95  
Rashmi Dhanwani-95    Raksha – 95    Adesh Choudhary-95    Suyash Goyal --95    Pushpanjali -- 95  
Rishi Amoria -- 95    Yash Saxena-95    Salil Gupta – 95    Vardhan Dogre—95    Lalit Gaur -- 95

- Q.1 Which color of white light suffers (i) least deviation and (ii) maximum deviation when a beam of white light passes through the glass prism? [1]
- Q.2 Which part of the human eye provides most of the refraction for the light rays entering the eye?[1]
- Q.3 Name the colour that is scattered the least by the tiny particles and the atoms/molecules of the atmosphere . [1]
- Q.4 Mention the name of a structure found in human eye that controls size of pupil.[1]
- Q.5 Why do we see stars twinkling whereas, where as planets do not twinkle?[2]
- Q.6 (a) What is the least distance of distant vision for the normal eye?  
(b) Does the above distance increase or decrease for long-sighted eye? Give reason for your answer with diagram. [2]
- Q.7 (a) Why danger signals are red in colour?  
(b) What would have been the colour of sky if the earth had no atmosphere? Give reason for your answer.[2]
- Q.8 A glass prism splits a beam of white light into seven colours but a glass slab does not. Why? Explain with diagram. [2]
- Q.9 What is meant by the power of accommodation of the eye? State the role of ciliary muscles in achieving it.[2]
- Q.10 Write the functions of the following. a) retina    b) iris    c) eye lens    d) ciliary muscles. [4]
- Q.11 A person cannot read newspaper placed nearer than 50cm from his eyes. Name the defect of vision he is suffering from. Draw a ray diagram to illustrate this defect. List its two possible causes. Draw a ray diagram to show how this defect may be corrected using a lens of appropriate focal length. [5]
- Q.12 A person with a defective eye sight can see only up to a distance of 125cm. Name the defect of his eye and find the nature and power of the lens needed to correct his eye defect. [3]
- Q.13 Draw the path way of light after its incidence on the lens/ mirror in the following figures. [3]



- Q.14 a) What is the natural phenomenon behind the formation of a rainbow?  
b) Name a device that can be used to observe such a phenomenon in the laboratory?  
c) If you are facing a rainbow in the sky, what is the position of sun with respect to your position?[3]
- Q.15 What is dispersion of white light? Write its cause. Draw a ray diagram to show dispersion of white light by a glass prism?
- Q.16 TARAK SHARMA is not able to see clearly the questions written of the black board placed at a distance of 5 m from him. (a) Name the defect of vision he is suffering from? (b) Draw the diagram to show this defect?  
(c) Name the type of lens used to correct this defect? (d) Draw the diagram to show how this defect can be corrected. [5]
- Q.17 How does the focal length of the eye lens of a normal human eye change while seeing :  
(i) a nearby object, and    (ii) a distant object    (iii) Which part of eye bring about this change? [3]
- Q.18 The given figure shows an experimental set-up for observing a phenomenon of light in colloidal solutions.  
S : Strong source of white light,  $L_1$  : Convex lens to provide a parallel beam of light    C : Circular hole in a cardboard,  
 $L_2$  : Convex lens to converge light on the screen MN,    T : Transparent glass tank.  
A student dissolves about 200 g of substance 'X' in about 2L of clean water in the tank and adds about 1 to 2 mL 'Y' to the water. (i) What is X & Y. (ii) What would he observe after the source of light S is switched on –  
(a) from the three sides of the glass tank ? (b) from the fourth side of the glass tank facing the circular hole ? [3]



- Q.19 What defect is shown in the given figure? What is the cause of this defect?[3]
- Q.20 Suddenly a news spread in the school that a student of class-X-A has expired due to heart attack, but he has donated his beautiful eyes to one of his friend. All the members of school felt very sad for his untimely death, but on the other side they were overwhelmed on hearing the donation of his eyes to his friend, who would now be able to see this beautiful nature. Do you think that the student who expired had done good job? Is it worth to donate vital organs?[3]