Assignment
Subject :Physics
Class :X

1.'Sania and Shreya' are best friends and study in grade 4, recently, Sania has been facing difficulty in reading the black-board text from the last desk. Shreya is little uncomfortable and wonders why sania avoids sitting on the last desk. On observation she found that sania often carries junk food in her lunch. Shreya has started sharing her lunch – full of green vegetables and fruits with her. Sania is now better and has also started taking a 'balanced diet'.

(i) Name the eye defect Sania is suffering from?
(ii) What are the two possible deformities related to her eye defect?
(iii)What value is shown by Shreya and Sania?

2 A student has difficulty in reading the blackboard while sitting in last row. What could be defect of vision? Draw ray diagrams to illustrate this defect and its correction.

3 a) Define power of a lens. What is its unit?
b) One student uses a lens of focal length 50cm and another of -25cm. What is the nature of lens and its power used by each of them?

4 a) Define absolute refractive index of a medium.
b) Light travels through glycerine with a speed of 2.05x108m/s. Find the R.I of glycerine.(speed of light in vacuum = 3x108m/s)

5 a) Draw ray diagram to show the formation of image of an object placed between infinity and optical centre of a concave lens.
b) An object 4cm high is placed at a distance of 20cm in front of a concave mirror of focal length 12cm. Find the position and size of image formed.

6 An object 2cm in size is placed 30cm in front of a concave mirror of focal length 15cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? (Ans :-30 cm)

7 (a) What is meant by power of accommodation of eye?
(b) How does focal length of the eye lens change when we shift looking from distant object to nearby object

8 What is meant by dispersion of white light? Draw a ray diagram to show dispersion of white light by a glass prism? Why do we get different colours?

9. By drawing ray diagrams, show the formation of image, when an object is placed on the principal axis of a concave mirror at the following positions and write about the nature of the image in each case.
(a) At infinity
(b) Beyond the centre of curvature
(c) At the centre of curvature
(d) At the principal focus
(e) Between the pole and focus