Q1) A person went for a medical check-up and found that the curvature of his eye lens was increasing. Which defect is he likely to suffer from?

(a) Myopia

(b) Cataract

(c) Presbyopia

(d) Hypermetropia

Correct Answer: Option (a)

Q2) A person gets out in the sunlight from a dark room. How does his pupil regulate and control the light entering the eye?

(a) The size of the pupil will decrease, and less light will enter the eye

(b) The size of the pupil will decrease, and more light will enter the eye

(c) The size of the pupil will remain the same, but more light will enter the eye

(d) The size of the pupil will remain the same, but less light will enter the eye

Correct Answer: Option (a)

Q3) When light rays enter the eye, most of the refraction occurs at the

(a) Crystalline lens

(b) The outer surface of the cornea

(c) Iris

(d) Pupil

Correct Answer: Option (b)

Q4) In which part of the human eye is the image of an object formed?

(a) Iris

(b) Pupil

(c) Retina

(d) Cornea

Correct Answer: Option (c)

Q5) The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because, among all other colours, the red light

(a) is scattered the most by smoke or fog

(b) is scattered the least by smoke or fog

(c) is absorbed the most by smoke or fog

(d) moves fastest in the air

Correct Answer: Option (b)

Q6) Which of the following phenomena of light are involved in the formation of a rainbow?

(a) Reflection, refraction and dispersion

(b) Refraction, dispersion and total internal reflection

(c) Refraction, dispersion and internal reflection

(d) Dispersion, scattering and total internal reflection

Correct Answer: Option (b)

Q7) A person sees an object closer to his eyes. What changes will take place in his eyes?

(a) the pupil size will expand

(b) the ciliary muscles will contract

(c) the focal length of the eye lens will increase

(d) the light entering the eye will be more

Correct Answer: Option (b)

Q8) The splitting of white light into different colours on passing through a prism is called

(a) reflection

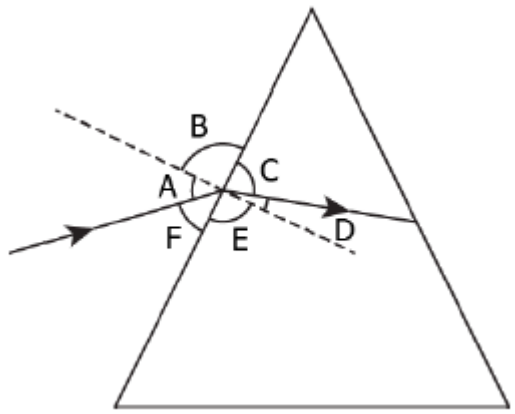
(b) refraction

(c) dispersion

(d) deviation

Correct Answer: Option (c)

Q9) The image shows a light ray incident on a glass prism.



The various angles are labelled in the image. Which angle shows the angle of incidence and angle of refraction, respectively?

(a) A and D

(b) B and E

(c) C and F

(d) D and F

Correct Answer: Option (a)

Q10) The deflection of light by minute particles and molecules of the atmosphere in all directions is called _____ of light.

(a) dispersion

(b) scattering

(c) interference

(d) Tyndall effect

Correct Answer: Option (b)

Q11) Which of the following phenomena contributes significantly to the reddish appearance of the sun at sunrise or sunset?

(a) Dispersion of light

(b) Scattering of light

(c) Total internal reflection of light

(d) Reflection of light from the earth

Correct Answer: Option (b)

Q12) Why do stars appear to twinkle at night?

(a) Because the light of stars travels in a different medium

(b) Because the distance of a star varies when the earth rotates

(c) Because the star changes its position relative to the earth

(d) Because the atmosphere reflects the light at different angles

Correct Answer: Option (a)

Q13) When white light enters a prism, it gets split into its constituent colours. This is due to

(a) different refractive index for the different wavelengths of each colour

(b) each colour having the same velocity in the prism

(c) prism material having high density

(d) Scattering of light

Correct Answer: Option (a)

Q14) When white light enters a glass prism from the air, the angle of deviation is least for

(a) blue light

(b) yellow light

(c) violet light

(d) red light

Correct Answer: Option (d)

Q15) Which option justifies that the Sun appears red at sunrise and sunset?

(a) Red scatters highest by the atmosphere

(b) The distance between the sun and earth reduces

(c) Red has a high wavelength, so it travels a longer distance

(d) The white light disperses into seven colours, only red enters the atmosphere

Correct Answer: Option (c)

Q16) At noon, the sun appears white as

(a) Light is least scattered

(b) All the colours of white light are scattered away

(c) Blue colour is scattered the most

(d) Red colour is scattered the most

Correct Answer: Option (a)

Q17) Twinkling of stars is due to atmospheric

(a) dispersion of light by water droplets

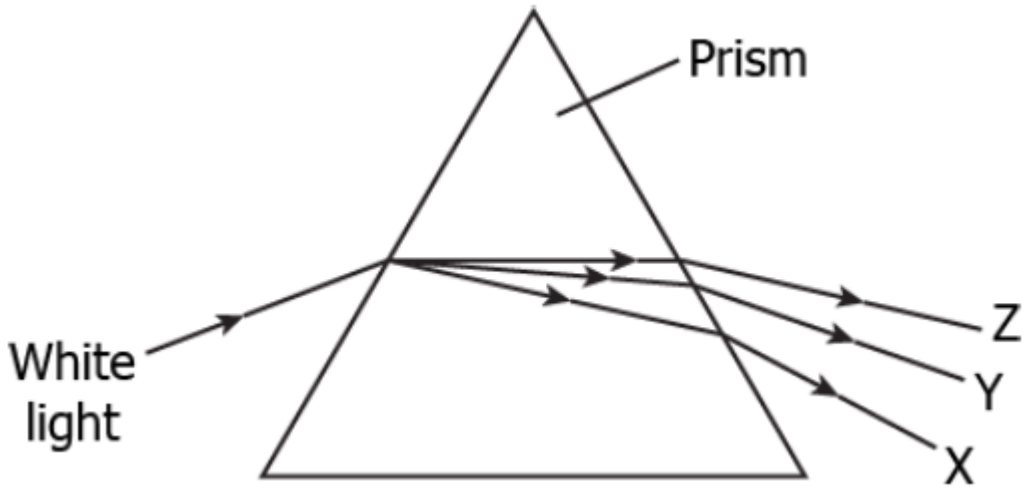
(b) refraction of light by different layers of varying refractive indices

(c) scattering of light by dust particles

(d) internal reflection of light by clouds

Correct Answer: Option (b)

Q18) The image shows the dispersion of the white light in the prism.



What will be the colours of the X, Y and Z?

(a) X: red; Y: green; Z: violet

(b) X: violet; Y: green; Z: red

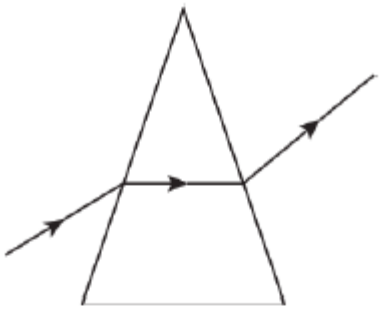
(c) X: green; Y: violet; Z: red

(d) X: red; Y: violet; Z: green

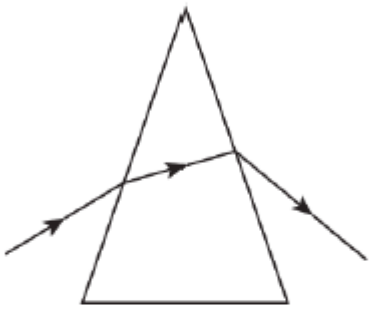
Correct Answer: Option (b)

Q19) Which image shows the deviation of light in a prism?

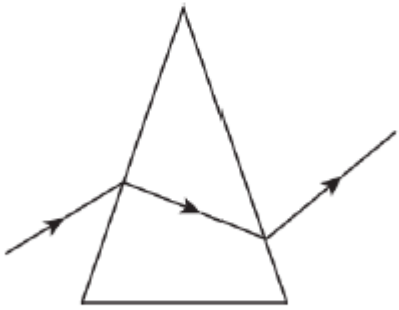
(a)



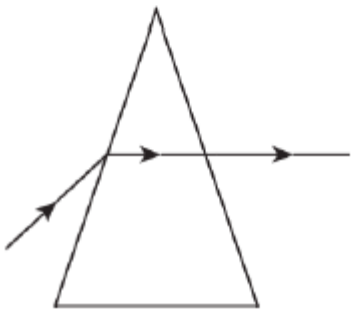
(b)



(c)

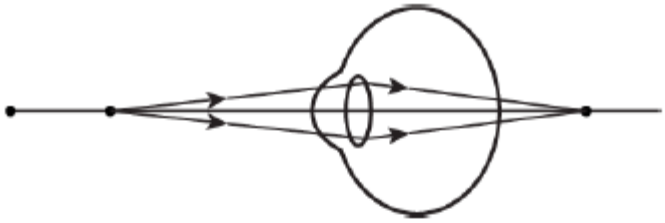


(d)



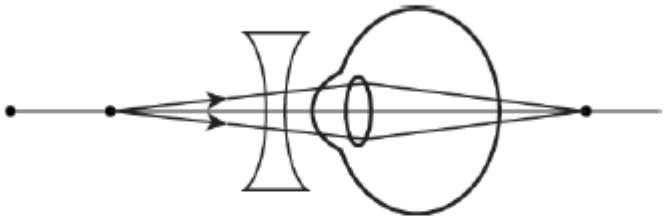
Correct Answer: Option (b)

Q20) The image shows the ray diagram of a defective eye.

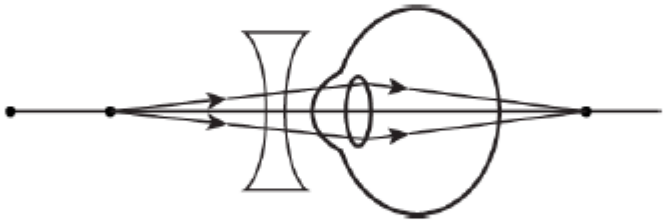


Which option shows the correction of the defect of the eye?

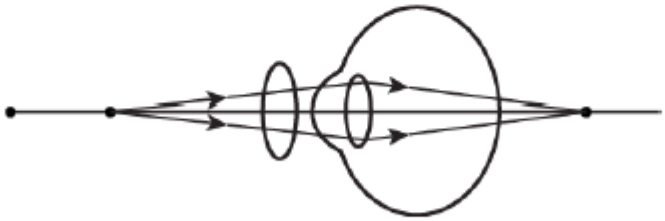
(a)



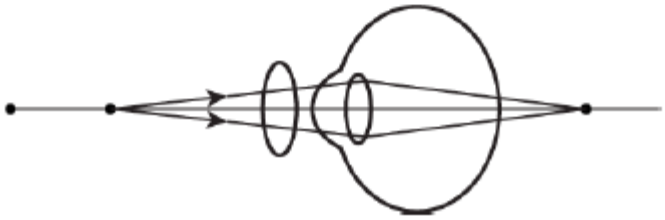
(b)



(c)



(d)



Correct Answer: Option (d)