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Question 1. A person cannot see distinctly objects kept beyond 2 m. This defect can be corrected by using a lens of power

- (a) +0.5 D
- (b) -0.5 D
- (c) +0.2 D
- (d) -0.2 D

Answer. (b)

Explanation: As the person with myopia uses a concave lens.

Question 2. A student sitting on the last bench can read the letters written on the blackboard but is not able to read the letters written in his text book. Which of the following statements is correct?

- (a) The near point of his eyes has receded away
- (b) The near point of his eyes has come closer to him
- (c) The far point of his eyes has come closer to him
- (d) The far point of his eyes has receded away

Answer. (a)

Explanation: The student is suffering from hypermetropia wherein distant images are clear but the nearby images are blurry.

Question 4. At noon the sun appears white as

- (a) light is least scattered
- (b) all the colours of the white light are scattered away
- (c) blue colour is scattered the most
- (d) red colour is scattered the most

Answer. (a)

Explanation: Sun is directly over head and sunlight travel relatively shorter distance causing only little of the blue and violet colours to be scattered.

Question 5. 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

Answer. (c)

Explanation: When Sunlight falls on tiny water droplets, rainbow is formed by dispersion, refraction and internal reflection of sunlight.

Question 6. 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

Answer. (b)

Explanation: The twinkling of a star is due to atmospheric refraction of light of stars.

Question 7. The clear sky appears blue, because

- (a) blue light gets absorbed in the atmosphere
- (b) ultraviolet radiations are absorbed in the atmosphere
- (c) violet and blue lights get scattered more than lights of all other colours by the atmosphere
- (d) light of all other colours is scattered more than the violet and blue colour lights by the atmosphere

Answer. (c)

Explanation: The molecules in the air scatter blue light more than red light.

Question 8. Which of the following statements is correct regarding the propagation of light of different colours of white light in air?

- (a) Red light moves fastest

- (b) Blue light moves faster than green light
- (c) All the colours of the white light move with the same speed
- (d) Yellow light moves with the mean speed as that of the red and the violet light

Answer. (c)

Explanation: Speed of light is a constant value regardless of its color.

Question 9. 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 air

Answer. (b)

Explanation: Red colour is scattered the least by smoke or fog due to its largest wavelength.

Question 10. 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

Answer. (b)