Chapter - 11

The Human Eye and Colourful World

(Assertion and Reasoning Questions)

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A.

(b) Both A and R are true but R is not the correct explanation of A.

(c) A is true but R is false.

(d) A is false but R is true.

Q.1. Assertion (A) : White light is dispersed into its seven-colour components by a prism.

Reason (R) : Different colours of light bend through different angles with respect to the incident ray as they pass through a prism.

Q.2. Assertion (A) : The phenomenon of scattering of light by the colloidal particles gives rise to Tyndall effect.

Reason (R) : The colour of the scattered light depends on the size of the scattering particles.

Q.3. Assertion (A) : A normal human eye can clearly see all the objects beyond certain minimum distance.

Reason (R) : The human eye has capacity of adjusting the focal length of eye lens.

Q.4. Assertion (A) : A rainbow is sometimes seen in the sky in rainy season only when observer's back is towards the Sun.

Reason (R) : Internal reflection in the water droplets cause dispersion and the final rays are in backward direction.

Q.5. Assertion (A) : Myopia is the defect of the eye in which only nearer objects are seen by the eye.

Reason (R) : The eye ball is elongated.

Q.6. Assertion (A) : Hypermetropia is the defect of the eye in which only farther objects are seen.

Reason (R) : Hypermetropia is corrected by using converging lens.

Q.7. Assertion (A) : Danger signals are made of red colour.

Reason (R) : Velocity of red light in air is maximum, so signals are visible even in dark.

Q.8. Assertion (A) : The sky looks dark and black instead of blue in outer space.

Reason (R) : No atmosphere containing air in the outer space to scatter sunlight.

Q.9. Assertion (A) : The stars twinkle, while the planets do not.

Reason (R) : The stars are much bigger in size than the planets.

Q.10. Assertion (A) : The Sun appears flattened at sunrise and sunset.

Reason (R) : The apparent flattering of the Sun's disc at sunrise and sunset is due to atmospheric refraction.

Q.11. Assertion (A) : Blue colour of sky appears due to scattering of blue colour.

Reason (R) : Blue light has longer wavelength.

-x-x-x-

ANSWER KEY

Q.1 : (a)	**Q.2** : (b)	**Q.3** : (a)	**Q.4** : (a)
Q.5 : (a)	**Q.6** : (b)	**Q.7** : (c)	**Q.8** : (a)

Q.9 : (b) **Q.10** : (a) **Q.11** : (c)