



Assertion and Reason

Solution 1

White light is composed of seven colors. A rainbow is always formed in a direction opposite to that of the Sun. To see a rainbow in the sky, the observer's back should be towards the sun. Incident sunlight falls on a raindrop, it then refracts, disperse and then reflects internally and finally refracts before coming out of raindrop.

Therefore, both assertion and reason are true and reason is not the correct explanation of the assertion.

Hence, the correct answer is option B.

Solution 2

Addition of water to a drum containing calcium oxide makes the drum hot if touched from the outside because the reaction between calcium oxide and water is an **exothermic** reaction. Due to the exothermic nature of the reaction, heat is released/evolved.

Hence, the correct answer is option C.

Solution 3

If the light ray is passing through the centre of curvature of a convave mirror, angle of incidence, in this case, is 0° . According to the law of reflection, the angle of reflection would be equal to angle of incidence i.e. 0° . So, light ray passing through the centre of curvature will retrace its path.

Therefore, both assertion and reason are true and the reason is correct explanation of assertion.

Hence, the correct answer is option A.

Solution 4

Metallic oxides are basic oxides, as a result, like bases they also react with acids to form salt and water.

Therefore, both Assertion and Reason are true and Reason is the correct explanation of the Assertion.

Hence, the correct answer is option A.

Solution 5

Due to strong electrostatic force of attraction, the oppositely charged ions are strongly attracted towards each other. As a result, a large amount of energy is required to break bonds in order to melt or boil the organic compound.

Hence, the correct answer is option A.

Solution 6

The transport of soluble products of photosynthesis is called translocation and it occurs in the part of the vascular tissue known as phloem. Translocation of food and other substances takes place in the sieve tubes with the help of adjacent companion cells both in upward and downward directions.

Hence, the correct answer is option C.

Solution 7

All arteries carry blood away from the heart, the pulmonary artery being an exception carries deoxygenated blood away from the heart. All veins carry deoxygenated blood from different body organs to the heart except pulmonary veins which carry oxygenated blood towards the heart.

Hence, the correct answer is option D.

Solution 8

There is no digestion of proteins in the mouth as there are no enzymes present in the mouth that helps in the digestion of proteins, it starts in the stomach. Saliva contains salivary amylase that helps in the digestion of starch.

Hence, the correct answer is option B.

Solution 9

The kidney produces the urine by the process of ultrafiltration that takes place under high pressure. Urine that is formed passes to the urinary bladder where it is stored for some time before its release.

Hence, the correct answer is option B.

Solution 10

The shorter wavelength light i.e., blue light gets scattered all around by the tiny particles in the deep ocean. Thus, scattering of the blue component of the white sunlight by tiny molecules makes the ocean appear blue.

Hence, the correct answer is option A.

Solution 11

Hydrogen gas is not evolved when a metal reacts with nitric acid. It is because HNO_3 is a strong oxidising agent. It oxidises the H_2 produced to water and itself gets reduced to any of the nitrogen oxides (N_2O , NO , NO_2).

Hence, the correct answer is option A.