

## Assertion and Reason

An Assertion is an affirmation, a declaration or a strong statement. According to dictionary, assertion refers to stating something forcefully and that is called Reason which is fact. Normally assertions have reasons. Here we shall deal with the combination of assertion and reason and relate with each other in order to find correct syntax.

**DIRECTIONS** (for the question 1 to 20): In each of the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided 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.
- E. Both A and R are false.

### **Que1.**

Assertion (A): When lightning strikes, the sound is heard a little after the flash is seen.

Reason (R): The velocity of light is greater than that of the sound.

**Ans. A)** R provides the correct reason for A.

### **Que2.**

Assertion (A): A ship rises as it enters the sea from a river.

Reason (R): The density of sea water is higher as compared to river water.

**Ans. A)** Due to higher density of sea water, the up thrust produced by the sea water on the ship is greater as compared to that produced by river water.

### **Que3.**

Assertion (A): Indian President is the head of the State.

Reason (R): Indian Parliament consists of the President, Lok Sabha and Rajya Sabha.

**Ans. B)** Both A and R are true. Indian President is the constitutional or titular head of the executive, the real power being vested in the Council of Ministers.

**Que4.**

Assertion (A): The British sovereignty continued to exist in India.

Reason (R): The British sovereign appointed the last Governor-General of free India

**Ans. D)** India drafted its own Constitution and formed its own government after gaining independence. So, A is false. But R is true.

**Que5.**

Assertion (A): Sprouting should not be done before consuming the grains.

Reason (R): Sprouting kills many vital vitamins.

**Ans. B)** Both A and R are false.

### **Que6.**

Assertion (R): Alcohol rather than mercury is used in a thermometer to measure a temperature of  $60^{\circ}\text{C}$ .

Reason (R): Alcohol has a lower freezing point than mercury.

**Ans. A)** Mercury freezes at  $-39^{\circ}\text{C}$ , while alcohol freezes at a point far below  $-100^{\circ}\text{C}$ . So, alcohol is used to measure lower temperatures. Similarly, mercury boils at  $357^{\circ}\text{C}$ , while alcohol boils at  $78^{\circ}\text{C}$ . So, mercury is used to measure high temperatures.

### **Que7.**

Assertion (A): Pipes carrying water often burst in cold countries during severe winter.

Reason (R): Water expands on freezing.

**Ans. A)** During severe winters, water in the pipes freezes to ice and expands, resulting in bursting of pipes.

### Que8.

Assertion (A): An electric bulb makes a 'bang' when it is broken.

Reason (R): The air inside the bulb rushes out immediately on breaking.

**Ans. C)** There is a vacuum inside the electric bulb. When the bulb breaks, air rushes in at great speed from all sides to fill the vacuum, thus producing a 'bang'.

### Que9.

Assertion (A): Salt is an ingredient used to cook food at higher altitudes.

Reason (R): Temperature is lower at higher altitudes.

**Ans. B)** Due to decrease in pressure at higher altitudes, water boils much below  $100^{\circ}\text{C}$  so that the food does not get sufficient heat for being cooked. Salt increases the boiling point of water.

### Que10.

Assertion (A): Carbon monoxide when inhaled causes death.

Reason (R): Carbon monoxide combines with hemoglobin.

**Ans. A)** Carbon monoxide, when inhaled, combines with hemoglobin of blood to form carboxy-hemoglobin which inhibits the transport of oxygen.

**Que11.**

Assertion (A): It's colder on mountains than it is on plains.

Reason (R): When altitude decreases, so does the temperature.

**Ans. A)** Higher above the sea level, temperature decreases at the rate of  $1^{\circ}\text{C}$  for every 165 meters of ascent making mountain peaks colder.

**Que12.**

Assertion (A): Inside the earth metals are present in molten state.

Reason (R): Earth absorbs the sun's rays.

**Ans. C)** Inside the earth, the high temperature and pressure keep metals molten. The earth reflects the sun's rays rather than absorbing them.

### **Que13.**

Assertion (A): AIDS does not have a vaccine.

Reason (R): The AIDS virus alters its genetic code.

**Ans. A)** A vaccine contains the inactivated germs of the disease. But the AIDS virus changes its genetic code and so no vaccine has been invented for it.

### **Que14.**

Assertion (A): Clothes are not washed properly in hot water.

Reason (R): Hard water contains many minerals.

**Ans. B)** In hard water, clothes do not get washed properly because hard water doesn't form lather with soap. Having said that, hard water does contain many minerals.

### **Que15.**

Assertion (A): In India, females have higher life expectancy than the males.

Reason (R): Females receive a better diet.

**Ans. E)** In India, due to high birth rate and due to neglect, females have a lower life expectancy as compared to males and although females need a better diet, they do not receive.

**Que16.**

Assertion (A): On 26th January, 1950, the Indian Constitution came into force.

Reason (R): 26th January is celebrated as the Republic Day.

**Ans. B)** The Indian Constitution came into force with effect from January 26, 1950 and since then this day is celebrated as the Republic Day.

**Que17.**

Assertion (A): Appendix is a vestigial organ in human body.

Reason (R): It does not participate in digestion.

**Ans. A)** Appendix, an organ that once aided in the digestion of raw vegetable matter, is now considered a functionless organ in human body.



**Que18.**

Assertion (A): Himalayas used to lay under the sea.

Reason (R): Fossils of various marine creatures are traced on the Himalayas.

**Ans. A)** Himalayas are the young fold mountains that at one time are believed to lie inside the Tethys Sea. This is evident from the recovery of fossils of marine creatures on its peaks.

**Que19.**

Assertion (A): Shivaji developed the guerilla Warfare.

Reason (R): Shivaji feared the Mughals.

**Ans. C)** Although Shivaji initiated the guerilla warfare to defeat the Mughals, he did not fear them.

### **Que20.**

Assertion (A): Legumes revive the soil fertility.

Reason (R): Microbes in the root nodules of legumes fix the atmospheric nitrogen.

**Ans. A)** The root nodules of leguminous plants contain nitrogen fixing bacteria which absorb the atmospheric nitrogen and convert it into nitrogenous compounds useful for the plants reviving soil fertility.

### **Que21.**

Assertion (A): In winters, people prefer wearing white clothes.

Reason (R): White clothes are great reflectors of heat.

**Ans. D)** We prefer to wear dark clothes in winter because they absorb the heat and keep the body warm. However, white clothes are good reflectors of heat and are worn in summer.

### **Que22.**

Assertion (A): In India, people elect their own representatives.

Reason (R): India is a democracy.

**Ans. B)** India, being a democracy, it is a government run by the representatives elected by its people.

### **Que23.**

Assertion (A): Vaccines prevent diseases.

Reason (R): Vaccines must be given to children.

**Ans. B)** To develop immunity inside one's body, Vaccines are given since they fend off diseases. Children must take them to build immunity within their body.

### **Que24.**

Assertion (A): Downpour of rain helps lessen the humidity in the atmosphere.

Reason (R): Rains are caused when atmosphere cannot hold more

moisture.

**Ans. D)** Rains are caused when the atmosphere in upper reaches cannot hold more water. But the downpour of rain increases the humidity in the atmosphere near the earth's surface.

**Que25.**

Assertion (A): Unpolished rice should be eaten.

Reason (R): Polished rice lacks Vitamin B.

**Ans. A)** The husk of unpolished rice contains Vitamin B1, deficiency of which causes the disease Beriberi. So, rice should be eaten unpolished.

**Que26.**

Assertion (A): Bats possess the ability to fly at night.

Reason (R): Bats emit ultrasonic.

**Ans. A)** Bats can fly in the night because they can trace the obstacle in the path by perceiving the echo of the ultrasonic sound emitted by them after it is reflected by the obstacle.

**Que27.**

Assertion (A): Iltutmish's daughter was Razia Sultan.

Reason (R): Iltutmish was a rebel.

**Ans. C)** Iltutmish was a ruler of slave dynasty and Razia was his daughter.

**Que28.**

Assertion (A): Silver is not used in making electric wires.

Reason (R): Silver is a poor conductor.

**Ans. C)** Although a good conductor of electricity, silver is not used to make electric wires because it is expensive.

**Que29.**

Assertion (A): Gandhiji withdrew the non-cooperation movement.

Reason (R): There was violence at the Chauri Chaura outrage.

**Ans. A)** Gandhiji withdrew the non-cooperation movement because of the violence in the Chauri Chaura outrage.

**Que30.**

Assertion (A): Carbon forms the largest number of compounds.

Reason (R): Carbon has the catenation property.

**Ans. D)** Carbon's ability to forms chains and rings of varying sizes helps make a very large number of compounds. This property of Carbon is called catenation property. However, the largest number of compounds are formed by hydrogen.