



## ASSERTION AND REASON QUESTIONS

For these questions, two statements are given – one labelled *Assertion* (A) and the other labelled *Reason* (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

- (a) Both A and R are true and R is correct explanation of the assertion.
- (b) Both A and R are true but R is not the correct explanation of the assertion.
- (c) A is true but R is false.
- (d) A is false but R is true.

### Chapter 1: Crop Production

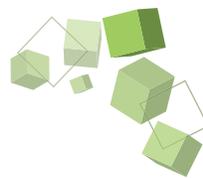
1. **Assertion:** Rabi crops are called winter crops.  
**Reason:** Rabi crops are sown in October-November.
2. **Assertion:** A wooden plank is used to level the field after harvesting.  
**Reason:** Levelling prevents the loss of moisture from the soil.
3. **Assertion:** Broadcasting is a method of sowing seeds.  
**Reason:** Seed drills are driven either by bullocks or a tractor.
4. **Assertion:** Fertilisers are organic compounds made in factories.  
**Reason:** Fertilisers provide specific nutrient required by the crop.
5. **Assertion:** A combine machine is a combination of harvester and thresher.  
**Reason:** There is no need of winnowing when the crop is harvested by a combine.

### Chapter 2: Microorganisms

1. **Assertion:** Microorganisms are found everywhere.  
**Reason:** Louis Pasteur discovered microorganisms in air.
2. **Assertion:** Organisms that obtain their food from other organisms are called saprophytes.  
**Reason:** Some microbes are useful in agriculture and many industries.
3. **Assertion:** Fungi are plant-like nongreen organisms.  
**Reason:** Fungi lack green pigment chlorophyll in their cells.
4. **Assertion:** Algae form a green-sheet on the surface of stagnant water.  
**Reason:** Algae are heterotrophic organisms.
5. **Assertion:** Bacteria are harmful as well as useful to us.  
**Reason:** Some bacteria are used in leather industry for tanning of hide.

### Chapter 3: Synthetic Fibres and Plastic

1. **Assertion:** Rayon is obtained from cellulose but considered as synthetic fibre.  
**Reason:** Cellulose needs extensive chemical treatment to form rayon.
2. **Assertion:** Polywool is made by mixing polyester and wool.  
**Reason:** Polyester is resistant to most chemicals.
3. **Assertion:** Melamine is used in making electrical plugs and switches.  
**Reason:** Melamine is a fire-resistant and heat-tolerant material.
4. **Assertion:** Recycling of plastic is very cheap and easy.  
**Reason:** Plastic can be moulded to make new products.

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5. **Assertion:** Acrylic is used in making woollen garments and blankets.  
**Reason:** Acrylic is a natural fibre which has a wool-like feel.

### Chapter 4: Metals and Nonmetals

1. **Assertion:** Bells are made of metals.  
**Reason:** Metals make a ringing sound when struck.
2. **Assertion:** Hydrogen is included in the reactivity series of metals.  
**Reason:** Hydrogen ion has positive charge like metal ions.
3. **Assertion:** Least reactive metal is placed at the bottom of the reactivity series of metals.  
**Reason:** Gold is the least reactive metal.
4. **Assertion:** Bromine is liquid at room temperature.  
**Reason:** Bromine absorbs heat from surroundings.
5. **Assertion:** Iodine is used as a disinfectant.  
**Reason:** Iodine has antiseptic properties.

### Chapter 5: Coal and Petroleum

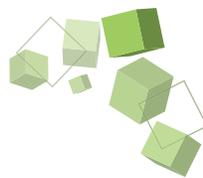
1. **Assertion:** CNG is a cleaner fuel.  
**Reason:** CNG does not produce smoke or ash on burning.
2. **Assertion:** Use of coal and petrol harms the environment.  
**Reason:** Coal and petrol produce many pollutants on burning.
3. **Assertion:** The stores of fossil fuels in nature are limited.  
**Reason:** Solar energy is an alternative source of energy.
4. **Assertion:** Coal is obtained by the distillation process.  
**Reason:** Coal is formed by the process of carbonisation.
5. **Assertion:** Rainwater containing acids in it is called acid rain.  
**Reason:** Acids from industrial waste are the main cause of acid rain.

### Chapter 6: Combustion and Flame

1. **Assertion:** Water can be used to put out all types of fire.  
**Reason:** Water is a common fire extinguisher.
2. **Assertion:** CNG and biogas are cleaner fuels.  
**Reason:** CNG and biogas are gaseous fuels.
3. **Assertion:** Carbon dioxide gas is used as fire extinguisher.  
**Reason:** Carbon dioxide gas is nonflammable and heavier than oxygen.
4. **Assertion:** Air is necessary for combustion.  
**Reason:** Air helps in attaining low ignition temperature.
5. **Assertion:** A candle burns with a flame.  
**Reason:** On burning, wax of candle vaporises, catches fire and forms flame.

### Chapter 7: Conservation of Biodiversity

1. **Assertion:** Deforestation results in droughts.  
**Reason:** Removal of trees causes reduced rain and lowering of water table.

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- Assertion:** Poaching has resulted in the reduction of many wild animals.  
**Reason:** An illegal hunting of wild animals is called poaching.
  - Assertion:** In national parks, only plants and animals of national importance are kept.  
**Reason:** In national parks, wild animals live in their natural habitats.
  - Assertion:** Project Tiger was launched to save tigers from poaching.  
**Reason:** In India, there are 10 tiger reserves.
  - Assertion:** The Red Data Book records all the information of wildlife.  
**Reason:** The Red Data Book is maintained by WCU, Swtzerland.

### Chapter 8: The Cell

- Assertion:** Cell wall provides rigidity to the cells of plants.  
**Reason:** Cell wall is found in plant cells only.
- Assertion:** Chloroplasts are green in colour.  
**Reason:** Chloroplasts contain a green pigment called chlorophyll.
- Assertion:** Most flowers are colourful.  
**Reason:** Flowers have pigments of different colours.
- Assertion:** Cells are studied with the help of a microscope.  
**Reason:** A microscope keeps the cells moist.
- Assertion:** Genes are the structures found in DNA.  
**Reason:** Genes are passed from parents to their offspring.

### Chapter 9: Reproduction in Animals

- Assertion:** The embryo of frog develops outside the female body.  
**Reason:** A frog is an oviparous animal.
- Assertion:** A pupa eats vigorously and rests inside the cocoon.  
**Reason:** A pupa changes into an adult butterfly.
- Assertion:** In asexual reproduction, zygote is not formed.  
**Reason:** *Hydra* reproduces by asexual reproduction.
- Assertion:** A zygote is formed by the fusion of a male gamete and a female gamete.  
**Reason:** A zygote grows rapidly and changes into an adult.
- Assertion:** In binary fission, male and female gametes are not required.  
**Reason:** Binary fission is a mode of asexual reproduction.

### Chapter 10: Reaching the Age of Adolescence

- Assertion:** Adolescence is the period between childhood and adulthood.  
**Reason:** Adolescence starts at the age of 11 years and ends up to 19 years of age.
- Assertion:** Appearance of Adam's apple marks the start of adolescence.  
**Reason:** Adam's apple is prominent in males.
- Assertion:** Menarche is the start of first menstrual cycle in a girl.  
**Reason:** Menarche marks the end of reproductive phase in a human female.
- Assertion:** An adolescent needs a balanced diet.  
**Reason:** Iron-rich food is good for adolescents.



5. **Assertion:** Sex of a child is determined at the time of fertilisation.

**Reason:** Sex chromosomes X and Y determine the sex of a child.

### Chapter 11: Force and Pressure

1. **Assertion:** Barometer is used to measure atmospheric pressure.

**Reason:** Sudden fall in atmospheric pressure indicates rain or snowfall.

2. **Assertion:** Pillars of bridges have broad bases.

**Reason:** Broad bases of pillars can bear the heavy weight of bridges.

3. **Assertion:** Gravitational force is a natural force of attraction.

**Reason:** Earth pulls lighter objects with greater force.

4. **Assertion:** Magnetic force acts only when two objects are in contact.

**Reason:** Magnetic force acts between two magnets or between a magnet and an iron object.

5. **Assertion:** Unbalanced forces are unequal and act in opposite directions.

**Reason:** An object moves in the direction of bigger force when acted upon by unbalanced forces.

### Chapter 12: Friction

1. **Assertion:** Friction stops a ball rolling over a floor.

**Reason:** Friction is a force which acts between two surfaces in a direction opposite to motion.

2. **Assertion:** Spring balance is used to measure friction.

**Reason:** Friction is a natural force that opposes motion.

3. **Assertion:** Machine oil is used for smooth working of machines.

**Reason:** Lubrication reduces the friction.

4. **Assertion:** Liquids exert friction on objects moving through them.

**Reason:** Friction by liquids makes objects moving through them lighter.

5. **Assertion:** Drag gives energy to birds to fly.

**Reason:** Birds have streamlined shape of body.

### Chapter 13: Sound

1. **Assertion:** We hear sound with our ears.

**Reason:** Sound is a kind of energy which stimulates our ears.

2. **Assertion:** Vibrating objects produce sound.

**Reason:** Vibrations make the air around to vibrate that reaches our ear as sound.

3. **Assertion:** Guitar is a string instrument.

**Reason:** Guitar produces sound by rubbing its strings.

4. **Assertion:** We produce sound with the help of vocal cords.

**Reason:** Men have longer vocal cords than women.

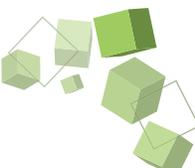
5. **Assertion:** Decibel is the measure of quality of sound.

**Reason:** 1 dB is equal to 1/10 of a bel.

### Chapter 14: Chemical Effects of Electric Current

1. **Assertion:** Chrome plating is done to insulate metal against electric current.

**Reason:** Chrome plating is done with chromium metal.

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- Assertion:** Distilled water is a poor conductor of electricity.  
**Reason:** Adding salt to distilled water makes it good conductor of electricity.
  - Assertion:** Electrolysis is the chemical effect of electric current.  
**Reason:** In electrolysis, electrolyte breaks up on passing electric current through it.
  - Assertion:** We may get an electric shock on touching an electric switch with wet hands.  
**Reason:** Water on wet hands conducts electricity.
  - Assertion:** An LED has longer life than bulbs and CFLs.  
**Reason:** Smaller electrical devices have longer life.

### Chapter 15: Some Natural Phenomena

- Assertion:** Electrical appliances are generally earthed.  
**Reason:** Earthing prevents the user from getting electric shocks.
- Assertion:** Electric current is a flow of electrons.  
**Reason:** Electrons make an object charged.
- Assertion:** Oppositely charged clouds produce lightning.  
**Reason:** The heat of lightning causes thunder.
- Assertion:** An earthquake originates at the epicentre.  
**Reason:** Earthquakes occur where tectonic plates meet with each other.
- Assertion:** A seismograph records the intensity of an earthquake.  
**Reason:** A seismograph absorbs heat generated during an earthquake.

### Chapter 16: Light

- Assertion:** We see objects in the presence of light.  
**Reason:** Light is a form of energy that stimulates our eyes.
- Assertion:** The angle of incidence is equal to angle of reflection.  
**Reason:** Incident ray, reflected ray and the normal always lie in the same plane.
- Assertion:** The sunlight is made up of yellow colour.  
**Reason:** A glass prism splits the sunlight into seven colours.
- Assertion:** Optic nerve takes the message of image formation to the brain.  
**Reason:** Optic nerve picks the visual signals from retina and sends them to the brain.
- Assertion:** Braille fonts are made a little raised from the surface of the paper.  
**Reason:** A Braille character is made up of seven dot positions.

### Chapter 17: Stars and the Solar System

- Assertion:** The sun is the largest star in the universe.  
**Reason:** The light from the sun reaches the earth in 8 minutes 20 seconds.
- Assertion:** The Pole Star does not appear to move.  
**Reason:** Pole Star is situated just above the north end of the axis of the earth.
- Assertion:** The man-made satellites revolve around the earth.  
**Reason:** The first Indian satellite was Bhaskar.
- Assertion:** The sun appears to rise in the east and sets in the west.  
**Reason:** The earth rotates on its axis from west to east.

5. **Assertion:** We always see the same side of the moon.

**Reason:** We see the near side of the moon.

## Chapter 18: Pollution of Air and Water

1. **Assertion:** Carbon dioxide present in excess acts as a pollutant.

**Reason:** Carbon dioxide forms a protective layer in the stratosphere of atmosphere.

2. **Assertion:** Carbon monoxide blocks the oxygen-binding capacity of haemoglobin.

**Reason:** Carbon monoxide is produced due to incomplete burning of fuel.

3. **Assertion:** Global warming is a serious environmental problem.

**Reason:** An increase in overall temperature of the earth's atmosphere is termed as global warming.

4. **Assertion:** Boiled water is safe to drink.

**Reason:** Boiling kills the germs present in water.

5. **Assertion:** Ozone cleans the air in atmosphere.

**Reason:** Ozone shields the earth from harmful UV rays of the sun.

## ANSWERS

### Chapter 1

1. (a) 2. (d) 3. (b) 4. (d) 5. (b)

### Chapter 2

1. (b) 2. (d) 3. (a) 4. (c) 5. (b)

### Chapter 3

1. (a) 2. (b) 3. (d) 4. (d) 5. (c)

### Chapter 4

1. (a) 2. (a) 3. (b) 4. (c) 5. (d)

### Chapter 5

1. (a) 2. (a) 3. (b) 4. (d) 5. (c)

### Chapter 6

1. (d) 2. (b) 3. (a) 4. (c) 5. (a)

### Chapter 7

1. (a) 2. (b) 3. (d) 4. (c) 5. (b)

### Chapter 8

1. (b) 2. (a) 3. (a) 4. (c) 5. (d)

### Chapter 9

1. (a) 2. (d) 3. (b) 4. (c) 5. (a)

### Chapter 10

1. (a) 2. (d) 3. (c) 4. (b) 5. (a)

### Chapter 11

1. (b) 2. (a) 3. (c) 4. (d) 5. (b)

### Chapter 12

1. (a) 2. (b) 3. (a) 4. (c) 5. (d)

### Chapter 13

1. (a) 2. (a) 3. (c) 4. (b) 5. (d)

### Chapter 14

1. (d) 2. (b) 3. (a) 4. (a) 5. (c)

### Chapter 15

1. (a) 2. (b) 3. (b) 4. (d) 5. (c)

### Chapter 16

1. (a) 2. (b) 3. (d) 4. (a) 5. (c)

### Chapter 17

1. (d) 2. (a) 3. (c) 4. (a) 5. (b)

### Chapter 18

1. (c) 2. (b) 3. (a) 4. (a) 5. (d)