

PREPARED BY:
N.ANAND, BT.Asst,
MODEL SCHOOL, PANRUTI
CUDDALORE
CELL : 8508320621

VISIT :
SCIENCEANAND@YOUTUBE
scienceanand86.blogspot.com

1. Laws of motion

V. Assertion & Reasoning

Mark the correct choice as

- (a) If both the assertion and the reason are true and the reason is the correct explanation of assertion.
 - (b) If both the assertion and the reason are true, but the reason is not the correct explanation of the assertion.
 - (c) If the assertion is true, but the reason is false.
 - (d) If the assertion is false, but the reason is true.
1. **Assertion:** The sum of the clockwise moments is equal to the sum of the anticlockwise moments.
Reason: The principle of conservation of momentum is valid if the external force on the system is zero.
 2. **Assertion:** The value of 'g' decreases as height and depth increases from the surface of the Earth.
Reason: 'g' depends on the mass of the object and the Earth.

2. Optics

V. Assertion and reasoning type

Mark the correct choice as

- a) If both assertion and reason are true and reason is the correct explanation of assertion.
 - b) If both assertion and reason are true but reason is not the correct explanation of assertion.
 - c) If assertion is true but reason is false.
 - d) If assertion is false but reason is true.
1. **Assertion:** If the refractive index of the medium is high (denser medium) the velocity of the light in that medium will be small
Reason: Refractive index of the medium is inversely proportional to the velocity of the light
 2. **Assertion:** Myopia is due to the increase in the converging power of eye lens.
Reason: Myopia can be corrected with the help of concave lens.

3. Thermal Physics

V. Assertion and reason type questions

- a. Both the assertion and the reason are true and the reason is the correct explanation of the assertion.
- b. Both the assertion and the reason are true but the reason is not the correct explanation of the assertion.
- c. The assertion is true but the reason is false.
- d. The assertion is false but the reason is true.

1. **Assertion:** There is no effects on other end when one end of the rod is only heated.
Reason: Heat always flows from a region of lower temperature to higher temperature of the rod.
2. **Assertion:** Gas is highly compressible than solid and liquid
Reason: Interatomic or intermolecular distance in the gas is comparably high.

4. Electricity

V. Assertion and reason type questions: Mark the correct choice as

- a) Both the assertion and the reason are true and the reason is the correct explanation of the assertion.
 - b) Both the assertion and the reason are true, but the reason is not the correct explanation of the assertion.
 - c) The assertion is true, but the reason is false.
 - d) The assertion is false, but the reason is true.
1. **Assertion:** Electric appliances with a metallic body have three wire connections.
Reason: Three pin connections reduce heating of the connecting wires
 2. **Assertion:** In a simple battery circuit the point of highest potential is the positive terminal of the battery.
Reason: The current flows towards the point of the highest potential
 3. **Assertion:** LED bulbs are far better than incandescent bulbs.
Reason: LED bulbs consume less power than incandescent bulbs.

5. Acoustics

V. Assertion and Reason Questions Mark the correct choice as

- a. Both the assertion and the reason are true and the reason is the correct explanation of the assertion.
 - b. Both the assertion and the reason are true but the reason is not the correct explanation of the assertion.
 - c. The assertion is true, but the reason is false.
 - d. The assertion is false, but the reason is true.
- 1) **Assertion:** The change in air pressure affects the speed of sound.
Reason: The speed of sound in a gas is proportional to the square of the pressure
 - 2) **Assertion:** Sound travels faster in solids than in gases.
Reason: Solid posses a greater density than that of gases.

6. Nuclear physics

VIII. Assertion and reason type questions: Mark the correct choice as

- (a) If both the assertion and the reason are true and the reason is the correct explanation of the assertion.

- (b) If both the assertion and the reason are true, but the reason is not the correct explanation of the assertion.
- (c) If the assertion is true, but the reason is false.
- (d) If the assertion is false, but the reason is true.
- Assertion:** A neutron impinging on U^{235} , splits it to produce Barium and Krypton.
Reason: U - 235 is a fissile material.
 - Assertion:** In a β - decay, the neutron number decreases by one.
Reason: In β - decay atomic number increases by one.
 - Assertion:** Extreme temperature is necessary to execute nuclear fusion.
Reason: In a nuclear fusion, the nuclei of the reactants combine releasing high energy.
 - Assertion:** Control rods are known as 'neutron seeking rods'
Reason: Control rods are used to perform sustained nuclear fission reaction

7. Atoms and molecules

V. Assertion and Reason:

Answer the following questions using the data given below:

- A and R are correct, R explains the A.
 - A is correct, R is wrong.
 - A is wrong, R is correct.
 - A and R are correct, R doesn't explain A.
- Assertion:** Atomic mass of aluminium is 27
Reason: An atom of aluminium is 27 times heavier than $1/12$ th of the mass of the C – 12 atom.
 - Assertion:** The Relative Molecular Mass of Chlorine is 35.5 a.m.u.
Reason: The natural abundance of Chlorine isotopes are not equal.

8. Periodic Classification of Elements

V. Assertion and Reason

Answer the following questions using the data given below:

- A and R are correct, R explains the A.
 - A is correct, R is wrong.
 - A is wrong, R is correct.
 - A and R are correct, R doesn't explain A.
- Assertion :** The nature of bond in HF molecule is ionic
Reason : The electronegativity difference between H and F is 1.9
 - Assertion :** Magnesium is used to protect steel from rusting
Reason : Magnesium is more reactive than iron
 - Assertion :** An uncleaned copper vessel is covered with greenish layer.
Reason : copper is not attacked by alkali

9. Solutions

10. Types of Chemical Reactions

11. Carbon and its Compounds

IV. Assertion and Reason:

Answer the following questions using the data given below:

- i) A and R are correct, R explains the A.
 - ii) A is correct, R is wrong.
 - iii) A is wrong, R is correct.
 - iv) A and R are correct, R doesn't explain A.
1. **Assertion:** Detergents are more effective cleansing agents than soaps in hard water.
Reason: Calcium and magnesium salts of detergents are water soluble.
 2. **Assertion:** Alkanes are saturated hydrocarbons.
Reason: Hydrocarbons consist of covalent bonds.

12. Plant Anatomy and Plant Physiology

13. Structural Organization of Animals

14. Transportation in Plants and Circulation in Animals

IX. Assertion and Reasoning

Direction: In each of the following questions a statement of assertion (A) is given and a corresponding statement of reason (R) is given just below it. Mark the correct statement as.

- a. If both A and R are true and R is correct explanation of A
 - b. If both A and R are true but R is not the correct explanation of A
 - c. A is true but R is false
 - d. Both A and R are false
1. **Assertion:** RBC plays an important role in the transport of respiratory gases.
Reason: RBC do not have cell organelles and nucleus.
 2. **Assertion:** Persons with AB blood group are called an universal recipients, because they can receive blood from all groups.
Reason: Antibodies are absent in persons with AB blood group.

15. Nervous System

V. Understand the assertion statement. Justify the reason given and choose the correct choice

- (a) Assertion is correct and reason is wrong
- (b) Reason is correct and the assertion is wrong
- (c) Both assertion and reason are correct

(d) Both assertion and reason are wrong.

1. **Assertion:** Cerebrospinal fluid is present throughout the central nervous system

Reason: Cerebrospinal fluid has no such functions

2. **Assertion:** Corpus callosum is present in space between the duramater and pia mater

Reason: It serves to maintain the constant intracranial pressure.

16. Plant and Animal Hormones

V . Assertion and Reasoning

Direction: In each of the following questions a statement of assertion (A) is given and a corresponding statement of reason (R) is given just below it. Mark the correct statement as.

a. If both A and R are true and R is correct explanation of A

b. If both A and R are true but R is not the correct explanation of A

c. A is true but R is false

d. both A and R are false

1. **Assertion:** Application of cytokinin to marketed vegetables can keep them fresh for several days.

Reason: Cytokinins delay senescence of leaves and other organs by mobilisation of nutrients.

2. **Assertion (A):** Pituitary gland is referred as "Master gland".

Reason (R): It controls the functioning of other endocrine glands.

3. **Assertion (A):** Diabetes mellitus increases the blood sugar levels.

Reason (R): Insulin decreases the blood sugar levels.

17. Reproduction in Plants and Animals

18.Heredity

19.Origin and Evolution of Life

20. Breeding and Biotechnology

V Understand the assertion statement, justify the reason given and choose the correct choice

a. Assertion is correct and reason is wrong

b. Reason is correct and the assertion is wrong

c. Both assertion and reason is correct

d. Both assertion and reason is wrong.

1. **Assertion:** Hybrid is superior than either of its parents.

Reason: Hybrid vigour is lost upon inbreeding.

1. **Assertion:** Colchicine reduces the chromosome number.

Reason: It promotes the movement of sister chromatids to the opposite poles.

2. **Assertion:** rDNA is superior over hybridisation techniques.

Reason: Desired genes are inserted without introducing the undesirable genes in target organisms.

21. Health and Diseases

XII. Assertion and Reasoning

In each of the following questions, a statement of Assertion is given and a corresponding statement of Reason is given just below it. Of statements given below mark the correct answer as

- a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion
- b) If both Assertion and Reason are true that Reason is not the correct explanation of Assertion
- c) Assertion is true but Reason is false
- d) Both Assertion and Reason are false

1. **Assertion:** All drugs act on the brain

Reason: Drugs disturb the functioning of the body and mind

2. **Assertion:** Excretion of excess glucose in urine is observed in a person with diabetes mellitus

Reason: Pancreas is unable to produce sufficient quantity of insulin

22. Environmental Management

VIII. Assertion and Reason

Direction : In each of the following question a statement of assertion(A) is given and a corresponding statement of reason (R). Of the four statements given below mark the correct answer.

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

1. A : Rainwater harvesting is to collect and store rain water.

R : Rainwater can be directed to recharge the underground water source.

2. A : Energy efficient bulbs like CFL must be used to save electric energy.

R : CFL bulbs are costlier than ordinary bulbs, hence using ordinary bulbs can save our money.

23. Visual Communication