Assertion and Reason

Q.No.1:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion (A): Mass of a body increases slightly when it is negatively charged.
Reason (R): Charging is due to transfer of protons only.

A. Both A and R are true, and R is the correct explanation of the assertion.
B. Both A and R are true, and 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.

Q.No.2:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: All free charges are integral multiples of a basic unit of charge i.e. charge on an electron or a proton.
Reason: Electric field lines start from negative charge and terminate at positive charge.

A. Both A and R are true, and R is the correct explanation of the assertion.
B. Both A and R are true, and 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.

Q.No.3:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: A finite size charged body may behave like a point charge if it produces an inverse square electric field.
Reason: Two charged bodies may be considered as point charges if their distance of separation is very large as compared to their dimensions.

A. Both A and R are true, and R is the correct explanation of the assertion.

B. Both A and R are true, and 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.

Q.No.4:

Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?

Assertion: The sum of total current entering a junction is equal to the sum of total current leaving the junction.

Reason: Kirchhoff's junction rule is based on the law of conservation of charge.

A. Both A and R are true, and R is the correct explanation of the assertion.

B. Both A and R are true, and 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.

Q.No.5:

Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?

Assertion: Potentiometer wire is generally made up of constantan - manganin alloy.

Reason: Constantan - manganin has a very high-temperature coefficient.

A. Both A and R are true, and R is the correct explanation of the assertion.

B. Both A and R are true, and 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.

Q.No.6:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: Magnetic field is produced by moving charge(s).
Reason: The magnetic field in the central region of the solenoid is uniform.

- **A.** Both A and R are true, and R is the correct explanation of the assertion.
- **B.** Both A and R are true, and 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.

Q.No.7:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: Parallel currents attract and anti parallel currents repel each other (in conductor).
Reason: Magnetic force always acts on a currying conductor in the direction of flow of current.

- **A.** Both A and R are true, and R is the correct explanation of the assertion.
- **B.** Both A and R are true, and 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.

Q.No.8:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: Net capacitance decreases in the series combination of capacitors.
Reason: The charges gets divided and reduced in the series combination.

- **A.** Both A and R are true, and R is the correct explanation of the assertion.
- **B.** Both A and R are true, and 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.

Q.No.9:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion (A): Magnetic moment is a scalar quantity.

Reason (R): Magnetic lines of force emanate from N-pole and enter into S-pole outside the magnet.

- **A.** Both A and R are true, and R is the correct explanation of the assertion.
- **B.** Both A and R are true, and 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.

Q.No.10:
Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion (A): Eddy currents can be used in induction brakes.
Reason (R): The direction of eddy currents can be obtained by using Lenz's law.

- **A.** Both A and R are true, and R is the correct explanation of the assertion.
- **B.** Both A and R are true, and 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.

Q.No.11: Two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Which of the following options is correct for the given statements?
Assertion: The resistance of an ideal ammeter should be zero.
Reason: The shunt resistance is always connected in series.

- **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.