**Aarambh Classes**

**Class 10**

**Science Questions**

**Assertion and reason**

**Electricity**

1. Assertion : Tungsten metal is used for making filaments of incandescent lamps .

Reason : The melting point of tungsten is very low .

1. Assertion : If a graph is plotted between the potential difference and the current flowing ,the graph is a straight line passing through the origin .

Reason : The current is directly proportional to the potential difference .

1. Assertion : Longer wires have greater resistance and the smaller wires have lesser resistance .

Reason : Resistance is inversely proportional to the length of the wire .

1. Assertion : Alloys are commonly used in electrical heating devices ,like electrical iron ,toasters ,etc.

Reaction : Alloys do not oxidise (burn ) readily at high temperatures .

1. Assertion : When the resistances are connected end to end consecutively ,they are said to be in series .

Reason : In case the total resistance is to be increased ,then the individual resistances are connected in series .

1. Assertion : When the resistances are connected between the same two points ,they are said to be connected in parallel .

Reason : In case ,the total resistance is to be decreased ,then the individual resistances are connected in parallel.

1. Assertion : A cell is a device which converts chemical energy into electrical energy .

Reason : Cell maintains a constant potential difference between its terminals for a long time .

1. Assertion : The resistivity of a substance does not depend on the nature of the substance and temperature .

Reason : The resisitivity of a substance is a characteristic property of the material .

1. Assertion : The fuse is placed in series with the device .

Reason : Fuse consists of a piece of wire made of a metal or an alloy of appropriate melting point .

10 . Assertion : The coil of a heater is cut into two equal halves and only one of them is used into heater . The heater will now require half the time to produce the same amount of heat .

1. Assertion : The wires supplying current to an electric heater are not heated appreciably .

Reason : Resistance of connecting wires is very small and heat generated is very less as compared to resistance .

1. Assertion : A current carrying wire should be charged .

Reason : The current in a wire is due to flow of free electrons in a definite direction .

1. Assertion : Electrons have anegative charge .

Reason : Electrons move always from a region of higher potential to a region of lower potential .

1. Assertion : Heater wire must have high resistance and high melting point .

Reason : If resistance is high ,the electric conductivity will be less .

1. Assertion : Fuse wire must have high resistance and low melting point .

Reason : Fuse is used for small current flow only .

1. Assertion : The connecting wires are made of copper .

Reason : The electrical conductivity of copper is high .

1. Assertion : A bird perches on a high power line and nothing happens to the bird .

Reason : The circuit is incomplete for the bird sitting on high power line .

1. Assertion : When a wire is stretched to three times its length ,its resistance becomes 9 times Reason : Resistance is directly proportional to length of wire .
2. Assertion : It is advantageous to transmit electric power at high voltage .

Reason : High voltage implies high current .

19. Assertion : Bending a wire does not affect electrical resistance .

Reason : Resistance of a wire is prorportional to resistivity of material .

1. Assertion : A voltmeter and ammeter can be used together to measure resistance but not power.

Reason : Power is proportional to voltage and current .