NIELIT Gorakhpur

UPS:- An uninterruptible power supply (UPS), also known as a battery backup, provides backup power when your regular power source fails or voltage drops to an unacceptable level. A UPS allows for the safe, orderly shutdown of a computer and connected equipment. The size and design of a UPS determine how long it will supply power. A UPS generally protects a computer against four different power problems:

- **Voltage surges and spikes -** Times when the voltage on the line is greater than it should be.
- **Voltage sags -** Times when the voltage on the line is less than it should be.
- **Total power failure -** Times when a line goes down or a fuse blows somewhere on the grid or in the building.
- **Frequency differences -** Times when the power is oscillating at something other than 60 Hertz.

Types of UPS

Standby /off line UPS:-

Standby is the most basic UPS topology. A standby UPS resorts to battery backup power in the event of common power problems such as a blackout, voltage sag, or voltage surge. When incoming utility power drops below or surges above safe voltage levels, the UPS switches to DC battery power and then inverts it to AC power to run connected equipment. These models are designed for consumer electronics, entry-level computers, POS systems, security systems, and other basic electronic equipment.

Line Interactive UPS:-

A line interactive UPS incorporates technology which allows it to correct minor power fluctuations (under-voltages and over voltages) without switching to battery. This type of UPS has an autotransformer that regulates low voltages and over voltages without having to switch to battery. Line interactive UPS models are typically used for consumer electronics, PCs, gaming systems, home theater electronics, network equipment, and entry-to-mid-range servers.

Online/ double conversion UPS:- A double-conversion (online) UPS provides consistent, clean, and near perfect power regardless of the condition of incoming power. This UPS converts incoming AC power to DC, and then back to AC. UPS systems with this technology operate on isolated DC power 100 percent of the time and have a zero transfer time because they never need to switch to DC power. Double-conversion UPS systems are designed to protect mission-critical IT equipment, data center installations, high-end servers, large telecom installations and storage applications, and advanced network equipment from damage caused by a power blackout, voltage sag, voltage surge, over voltage, voltage spike, frequency noise, frequency variation, or harmonic distortion.

Assignment:-
1-Explain utility of UPS in computer.
2-Explain Different kinds of UPS.