**IEEE Electronics Domain – Winter Taskphase**Syllabus

**Basic Electronics**

1. Resistors, Capacitors, Inductors and their applications.

* Resistor values
* Capacitive Filters and Types of capacitors
* Application of LCR circuits

2. Transistors and their applications

* Transistor as a switch
* Transistor as an amplifier
* BJT, FET

4. Power Management

* Batteries ( types, power, voltage & current rating, C & mAh values )
* DC-DC Converters (brief)
* Fuses
* Wiring Methodology

5. DC Motors

* Types of DC motor (brief)
* Working
* How to choose a desired DC motor (electrical and mechanical power aspects )

6. Motor Driver working and selection (L293D, L293)

7. Other Topics

* Logic Gates
* OPAMPs
* Voltage Divider
* Voltage Regulator

8. Basic Sensors

* IR, PIR (transmitter / receiver based)
* LDR, Temperature Sensor, Flex Sensor

**Arduino**

1. LED Blinking
2. Push Button LED Toggle (digital input)
3. Potentiometer reading (analog input)
4. LED brightness(PWM)