Microprocessors Project

Produce a DC motor speed control circuit using PIC16F84 or PIC16F877A. Design criteria are given below.

- **Software type PWM** will be used in your codes.
- There will be four buttons. Their tasks will be;

  - 1st button – Starts the motor
  - 2nd button – Accelerating the motor
  - 3rd button – Decelerating the motor
  - 4th button – Stops the motor

- There will be minimum 4 or more speed levels for the motor.
- PIC's output is 5 Volts so prefer a DC motor that requires 5 or 6 Volts for input.
- PIC's maximum current output for one pin is 25mA so an amplifier circuit must be connected to the output pin of PIC. (Common Collector or Darlington Circuit)
- Circuit will be produced on **PCB** or **Copper Plate**. (PCB is preferred = Higher score)
- All team members must be active on this project. If anybody does not work or be passive he/she will get low score.
- If any team gets professional help, they will get lower scores than an unsuccessful team. Your project **must be completely your work and must be unique**.
- A project report will be prepared and the format will be;

  - A formatted and explanatory cover page
  - The components that used in the project (datasheets needed for ICs)
  - The construction phase of your project
  - The circuit diagram and PCB drawing of your project
  - The software of your project with explanations

- It is recommended to test your circuit on a breadboard and be sure it works properly before producing it on a PCB.
- It will be helpful if each team buys a PIC programmer so you can work faster. It is a low probability that you develop the perfect code at first try.
- Every team will present their project at the last week **(11 January 2021)** of this term. If any team misses their presentation time they will be failed. You must obey your presentation times.

Deadline of the Project: 11 January 2021
Presentations time: 14.00
Place of presentation: Adobe Connect + Zoom

GOOD LUCK
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