SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME : 19OE120 AUTOMOTIVE ELECTRONICS

I YEAR /I SEMESTER MECHATRONICS ENGINEERING

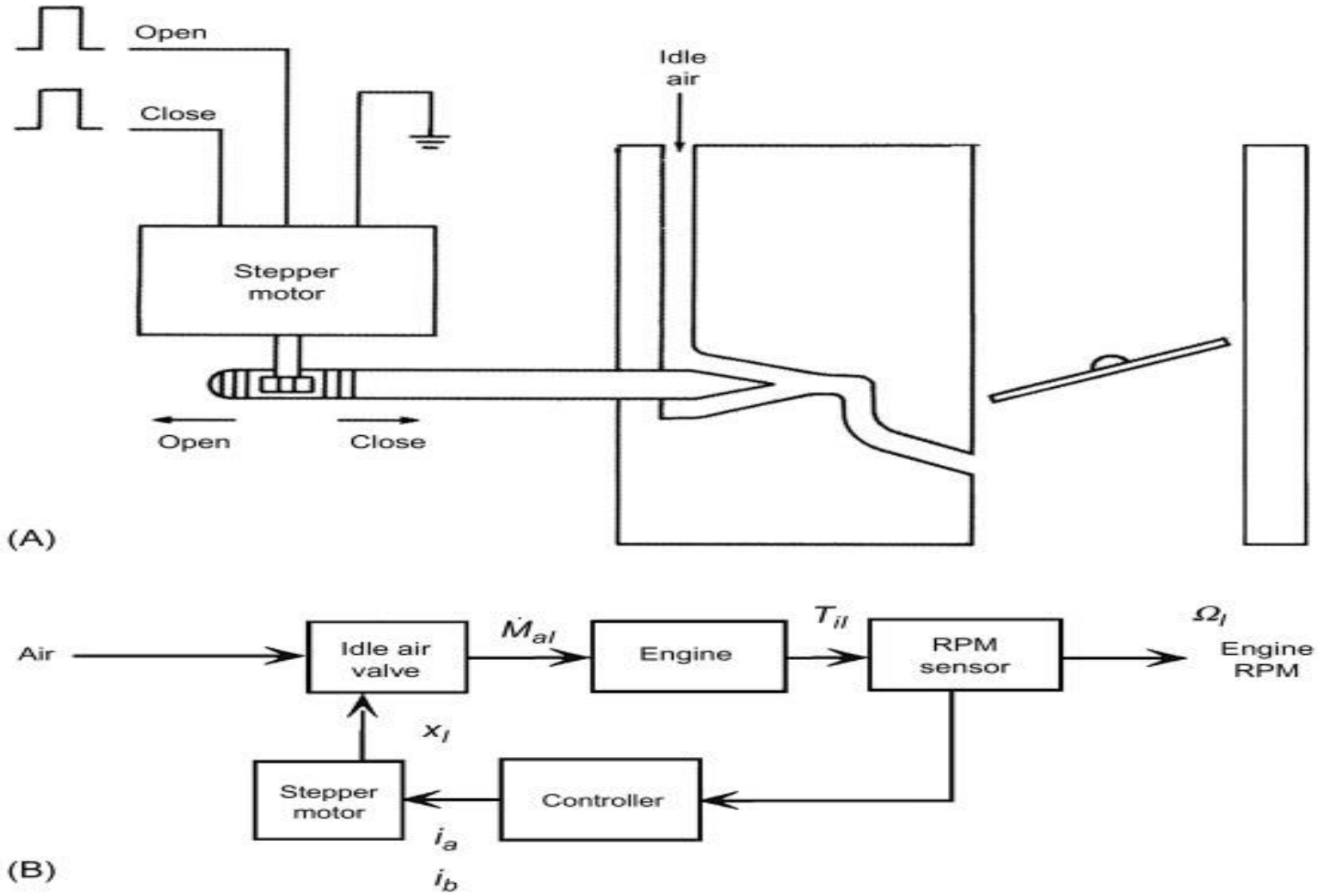
Unit 1 – Introduction to ECU

IDLE SPEED CONTROL

IDLE SPEED CONTROL

- The idle speed control mode is used to prevent engine stall during idle
- The goal is to allow the engine to idle at as low an RPM as possible yet keep the engine from running rough and stalling when power-consuming accessories, such as air-conditioning compressors and alternators, turn on.
- The control mode selection logic switches to idle speed control when the throttle angle reaches its zero (completely closed) position as detected by a switch on the throttle that is closed and engine RPM falls below a minimum value
- This condition often occurs when the vehicle is stationary. Idle speed is controlled by using an electronically controlled throttle bypass valve

IDLE SPEED CONTROL



- A digital engine control computer can precisely determine the position of the valve in a number of ways.
- In one way, the computer can send sufficient pulses to close completely the valve when the ignition is first switched on
- Then, it can open pulses (phased to open the valve) to a specified (known) position
- he physical configuration for the idle speed control is depicted in Fig. A. A block diagram for an exemplary idle speed control is depicting Fig. B.
- In addition, the digital engine control system receives digital on/off status inputs from several power-consuming devices attached to the engine, such as the air-conditioner clutch switch, park-neutral switch and the battery charge indicator.
- These inputs indicate the load that is applied to the engine during idle