1. **What sensor recognises and identifies road lines in line assistance systems**

* Long range radar
* Video camera
* Short range radar
* **Ultrasonic sensor**

1. **All of the following are communications systems used in the car industry, except:**

* MOST
* **ABS**
* LIN
* LAN

1. **What is a transducer used for?**

* **To invert a non-electrical input to an electrical output**
* To convert an electrical input to a mechanical output
* To reduce effects of noise disturbences on a mesure quantity
* All of the above

1. **A basic instrumentation system consists on which of the following**

* **Sensor**
* Signal amplifier conditioner
* Signal processor
* **All**

1. **On a data bus that uses two wires, why are the wires twisted**

* To increase the physical twence of the wires
* To identify the circuit
* **To reduce the effects of the high current flow through the wires on the circuit**
* Minimize the effects of an induced voltage on the data bus

1. **The hall effect:**

* Is the resonance of a long narrow corridor
* I**s** the flow of air trough the intape manifold
* Zero crossing error in camshaft position measurements
* **A phenomenom current in semiconductors materials in which voltage is generated that is proportional to the strength of the field**

1. **A thermistor is:**

* **A semiconductor temperature sensor**
* A device for detecting level
* A semiconductor speed control system
* A new type of (microalgo)

1. **What is and A/D converter**

* **A device that changes a continuously doubling countity in an analogical format**
* An 8 bit counter
* An analog to decimal converter
* A type of memory

1. **The acceleration sensor is:**

* A semiconductor based on silicon
* Micromechanical system within chip
* **Circuit that uses capacitance difference to measure movement**
* **All**

1. **The Volkswagen gate issue was enabled by**

* the installation of a failure sensor
* **a software detecting the standard test and changing motor parameters**
* the use of special additive to gasoil
* NONE

1. **An ideal ABS measures skid by**

* Measurement the difference between tyre pressure and speed
* **Differencing vehicle speed and braking pressure with respect to tyres**
* Measuring crankshaft angular speed
* NONE

1. **A control system may content which of the following components**

* Error amplifier
* **Control logic**
* Plant
* ALL

1. **The components of microcontroller include**

* CPU
* Specific blocks
* Memory
* **ALL**

1. **An operational amplifier is**

* An amplifier converting current to voltage
* **A differential amplifier with very high mean**
* An amplifier able to drive high …
* **NONE**

1. **All of the following can be used to measure movement, speed and acceleration and positioning except:**

* Potentiometer
* Magnetic pulse generator
* **Piezoelectric device**
* Hall-effect sensor

1. **The ultrasonic sensor uses the following:**

* Hall effect
* Sun effect
* **Electromagnetic effect**
* ALL

1. **Radar is a new sensor used:**

* In autonomous driving
* To detect vehicles ahead
* To reduce deaths on the road
* **ALL**

1. **A protocol is defined as:**

* **Common communicator method**
* A method of reducing ENI
* A type of transistor
* ALL

1. **An optical fiber is**

* A tiny bean of light
* **An optical waveguide that is often called a lifepype**
* An optical switch
* **NONE**

1. **Which of the following is a passive safety feature:**

* Airbag
* Seatbelt
* Belt tensioner
* **ALL**

1. **Which of the following systems are control strategies used in the vehicle power train**

* **Adaptive control**
* **Open loop control**
* **Close loop control**
* **ALL**

1. **The ABS control system works on**

* Speed
* **Traction**
* fueling engine
* Trajectory of steering wheel

1. **Basic control systems use a feedback loop in order to:**

* Reduce noise in communication systems
* Communicate with the electronic control unit
* **Create a signal error using the reference signal and feedback**
* **NONE**

1. **The fastest communication technology in vehicle is:**

* UTP
* **POF**
* STP
* IR

**LIN**

**Bus type 🡪** conventional bus

**Topology** 🡪 Linear bus

**Physical medium 🡪** copper conductor, single wire

**Applications 🡪** simple applications in the comfort andconvenience electronics area

**Control mechanism 🡪** event-driven

**Dis 🡪**

**Adv 🡪** low cost, guaranteed latency times

**MOST**

**Bus type 🡪** optical bus

**Topology** 🡪 ring bus

**Physical medium 🡪** plastic or glass optical waveguides

**Applications 🡪** transmission of control, audio and video information

**Control mechanism 🡪** time event-driven

**Dis 🡪**

**Adv 🡪** high data rate ~ 25 Mbits/seg, optical fiber 🡪 speed

**25 -- ABS**

ABS stand for Antilock Braking System

Assists the driver in deceleration of the vehicle in poor or marginal braking conditions (e.g. wet/icy roads)

ABS- equipped cars: steady brake force… let the system adjust tire slip dynamically...to achieve near optimum value (on average) automatically

Optimal friction coefficient at each Wheel

Sufficient lateral friction coefficient for good directional control

Slip near the optimum involves some reduction in lateral force

Brakes individually controlled at each wheel

Components:

Modulator

Electronic Controller

Sensor (antes de la rueda)

Proportioning valves

Hydraulic power source