

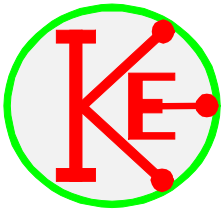
Essential Knowledge and formulae AS Electronics

The following list of topics is essential knowledge that may be needed in the Electronics Module Examinations.

- 😊 means that it is very essential,
😊😊 means that it is absolutely essential.

Foundation Module.

- 😊 Basic Truth tables
- 😊 Use of ohm's Law
- Calculation of power
- Resistors in parallel
- Resistors in Series
- 😊 Calculation of series resistor for LEDs and zener diodes
- 😊 Voltage divider calculations
- 😊 Op-amp comparator formulae
- Capacitors in series
- Capacitors in parallel
- Time constants
- 😊 555 monostable circuit diagram
- 😊😊 Explanation of how 555 monostable works
- 😊 Calculation of 555 monostable period
- 😊 555 astable circuit diagram
- 😊😊 Explanation of how 555 astable works
- 😊 Calculation of 555 astable period.



Further Module

- Karnaugh maps
- 😊 Circuit diagram for NAND gate latch
- 😊😊 Explain how a NAND gate bistable latch works
- Circuit diagram for a D-type shift register
- Explanation of how a D-type shift register works
- 😊 Circuit diagram for a NAND gate monostable
- 😊😊 Explanation of how a NAND gate monostable works
- 😊 Calculation of period of a NAND gate monostable
- 😊 Circuit diagram for a NAND gate astable
- 😊😊 Explanation of how a NAND gate astable works
- 😊 Calculation of period of a NAND gate astable
- Modulo N up/down counters
- Hexadecimal notation
- 😊 Circuit diagram of an inverting op-amp amplifier
- 😊 Calculation of the voltage gain of an inverting op-amp amplifier
- 😊 Circuit diagram of a non-inverting op-amp amplifier
- 😊 Calculation of the voltage gain of a non-inverting op-amp amplifier
- 😊 Circuit diagram of a summing op-amp amplifier
- Calculation of the output voltage of a summing op-amp amplifier
- Calculation of the reactance of a capacitor
- Circuit diagram of high pass and low pass filters
- Calculation of filter circuit break points
- 😊 Circuit diagram of a push pull amplifier
- 😊😊 Effects of saturation distortion
- 😊😊 Effects and cures for cross-over distortion
- 😊 Calculation of output power from a push pull amplifier
- 😊😊 Features of efficient heat sinks.