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Objective cum very short answer type Questions and Answers with explanation

M.Sc. Physics: IV Semester
Paper IV (Electronics-IV) : PHY 404
Total Q&A : 100

UNIT I : Combinational Logic Circuits [19]

1. Which is the correct order of sequence for representing the input values in K-map?

a. (00, 01, 10, 11) **b.** (00, 10, 01, 11)
c. (00, 01, 11, 10) **d.** (00, 10, 11, 01)

ANSWER: (00, 01, 11, 10)

2. Which code is used for labeling the cells of K-map?

a. Binary **b.** Gray
c. BCD **d.** ASCII

ANSWER: Gray

3. How is the relation specified between input and output in logic circuits?

a. Switching equations **b.** Truth-table
c. Logic diagram **d.** All of the above

ANSWER: All of the above

4. Which De Morgan's theorem states that the complement of a sum is equal to the product of complements?

a. AB = A + B **b.** A+B = A. B
c. A+B = A.B **d.** AB = A + B

ANSWER: A+B = A. B

5. What does the below stated OR Law imply, while performing OR operation of an input with '1'?
Expression of OR Law: A+ 1 = 1

a. Output will always be equal to input **b.** Output will always be high
c. Output will always be low **d.** Output will always be same

ANSWER: Output will always be high

6. How many inputs are required for a 1-of-10 BCD decoder? **?**

a. 4 **b.** 8

c. 10 **d.** 1

ANSWER: Option a=4

7. Most demultiplexers facilitate which of the following?

a. decimal to hexadecimal **b.** single input, multiple outputs

c. ac to dc **d.** odd parity to even parity

ANSWER: Option b

8. One application of a digital multiplexer is to facilitate:

a. code conversion **b.** parity checking

c. parallel-to-serial data conversion **d.** data generation

ANSWER: Option c

9. When two or more inputs are active simultaneously, the process is called:

a. first-in, first-out processing **b.** priority encoding

c. ripple blanking **d.** priority decoding

ANSWER: Option b

10. Which digital system translates coded characters into a more intelligible form?

a. Encoder **b.** Display

c. Counter **d.** Decoder

ANSWER: Option d

11. Select one of the following statements that best describes the parity method of error detection:

A. Parity checking is best suited for detecting single-bit errors in transmitted codes.

B. Parity checking is best suited for detecting double-bit errors that occur during the transmission of codes from one location to another.

C. Parity checking is not suitable for detecting single-bit errors in transmitted codes.

D. Parity checking is capable of detecting and correcting errors in transmitted codes.

Answer: Option **A**

12. A multiplexed display:

A. accepts data inputs from one line and passes this data to multiple output lines

B. uses one display to present two or more pieces of information

C. accepts data inputs from multiple lines and passes this data to multiple output lines

D. accepts data inputs from several lines and multiplexes this input data to four BCD lines

Answer: Option **B**

13. Which type of decoder will select one of sixteen outputs, depending on the 4-bit binary input value?

A. hexadecimal

B. dual octal outputs

C. binary-to-hexadecimal

D. hexadecimal-to-binary

Answer: Option **A**

14. A magnitude comparator determines:

A. A ≠ B and if A ∝ B or A >> B

B. A ≈ B and if A > B or A < b

C. A = B and if A > B or A < b

D. A ≡ B and if A < b or a > B

Answer: Option **C**

15. A circuit that responds to a specific set of signals to produce a related digital signal output is called a(n):

A. BCD matrix

B. display driver

C. encoder

D. decoder

Answer: Option **C**

16. What is combinational circuit? Give an example.

Solution:

A combinational circuit consists of logic gates whose outputs at any time aredetermined from the present combination of inputs. Examples of combinational circuits are adder, coder, magnitude comparator etc.

17. What are the universal gates?

Solution:

NAND and NOR are universal gates, because they replace all the other gates in a circuit.

18. What is demux?

Solution:

Demultiplexer is a circuit that receives information on a single line and transmits this information on one of 2n possible output lines. A demultiplexer is a decoder with an enable input.

19. What does LS in 74LS00 indicate?

Solution:

Low power schottky TTL

UNIT II : Memory [10]

1. A computerized self-diagnostic for a ROM test uses:
   - **A.** The check-sum method
   - **B.** ROM listing
   - **C.** ROM comparisons
   - **D.** Checkerboard test

   Answer: Option **A**
2. How many storage locations are available when a memory device has twelve address lines?
   - **A.** 144
   - **B.** 512
   - **C.** 2048
   - **D.** 4096

   Answer: Option **D**
3. Which of the following memories uses a MOSFET and a capacitor as its memory cell?
   - **A.** SRAM
   - **B.** DRAM
   - **C.** ROM
   - **D.** DROM

   Answer: Option **B**
4. Which of the following best describes nonvolatile memory?
   - **A.** memory that retains stored information when electrical power is removed
   - **B.** memory that loses stored information when electrical power is removed
   - **C.** magnetic memory
   - **D.** nonmagnetic memory

   Answer: Option **A**
5. The access time (t_{acc}) of a memory IC is governed by the IC's:
   - **A.** internal address buffer
   - **B.** internal address decoder
   - **C.** volatility
   - **D.** internal address decoder and volatility

   Answer: Option **B**
6. Select the best description of read-only memory (ROM).
   - **A.** nonvolatile, used to store information that changes during system operation
   - **B.** nonvolatile, used to store information that does not change during system operation
   - **C.** volatile, used to store information that changes during system operation
   - **D.** volatile, used to store information that does not change during system operation

Answer: Option **B**

7. Advantage(s) of an EEPROM over an EPROM is (are):
   - **A.** the EPROM can be erased with ultraviolet light in much less time than an EEPROM
   - **B.** the EEPROM can be erased and reprogrammed without removal from the circuit
   - **C.** the EEPROM has the ability to erase and reprogram individual words
   - **D.** the EEPROM can erase and reprogram individual words without removal from the circuit

   Answer: Option **D**
8. Memory that loses its contents when power is lost is:
   - **A.** nonvolatile
   - **B.** volatile
   - **C.** random
   - **D.** static

   Answer: Option **B**
9. Select the best description of the fusible-link PROM.
   - **A.** user programmable, one-time programmable
   - **B.** manufacturer programmable, one-time programmable
   - **C.** user programmable, reprogrammable
   - **D.** manufacturer programmable, reprogrammable

   Answer: Option **A**
10. A nonvolatile type of memory that can be programmed and erased in sectors, rather than one byte at a time is:
    - **A.** flash memory
    - **B.** EPROM
    - **C.** EEPROM
    - **D.** MPROM

    Answer: Option **A**

UNIT III : A/D and D/A Converters [11]

1. Which of the following is a type of error associated with digital-to-analog converters (DACs)?
   - **A.** nonmonotonic error
   - **B.** incorrect output codes
   - **C.** offset error
   - **D.** nonmonotonic and offset error

   Answer: Option **D**

2. A 4-bit R/2R digital-to-analog (DAC) converter has a reference of 5 volts. What is the analog output for the input code 0101.

A. 0.3125 V

B. 3.125 V

C. 0.78125 V

D. –3.125 V

Answer: Option B

3. A binary-weighted digital-to-analog converter has an input resistor of 100 k Ω. If the resistor is connected to a 5 V source, the current through the resistor is:

A. 50 μA

B. 5 mA

C. 500 μA

D. 50 mA

Answer: Option A

4. The practical use of binary-weighted digital-to-analog converters is limited to:

A. R/2R ladder D/A converters

B. 4-bit D/A converters

C. 8-bit D/A converters

D. op-amp comparators

Answer: Option B

5. The difference between analog voltage represented by two adjacent digital codes, or the analog step size, is the:

A. quantization

B. accuracy

C. resolution

D. monotonicity

Answer: Option C

6. The primary disadvantage of the flash analog-to digital converter (ADC) is that:

A. it requires the input voltage to be applied to the inputs simultaneously

B. a long conversion time is required

C. a large number of output lines is required to simultaneously decode the input voltage

D. a large number of comparators is required to represent a reasonable sized binary number

Answer: Option D

7. What is the major advantage of the R/2R ladder digital-to-analog (DAC), as compared to a binary-weighted digital-to-analog DAC converter?

A. It only uses two different resistor values.

B. It has fewer parts for the same number of inputs.

C. Its operation is much easier to analyze.

D. The virtual ground is eliminated and the circuit is therefore easier to understand and troubleshoot.

Answer: Option A

8. The resolution of a 0–5 V 6-bit digital-to-analog converter (DAC) is:

A. 63%

B. 64%

C. 1.56%

D. 15.6%

Answer: Option C

9. In a flash analog-to-digital converter, the output of each comparator is connected to an input of a:

A. decoder

B. priority encoder

C. multiplexer

D. demultiplexer

Answer: Option B

10. Which is not an analog-to-digital (ADC) conversion error?

A. differential nonlinearity

B. missing code

C. incorrect code

D. offset

Answer: Option A

11. Sample-and-hold circuits in analog-to digital converters (ADCs) are designed to:

A. sample and hold the output of the binary counter during the conversion process

B. stabilize the comparator's threshold voltage during the conversion process

C. stabilize the input analog signal during the conversion process

D. sample and hold the D/A converter staircase waveform during the conversion process

Answer: Option C

UNIT IV : Microprocessors and Displays [30+30=60]

Question 1. What Are The Various Registers In 8085?
Answer :
Accumulator register, Temporary register, Instruction register, Stack Pointer, Program Counter are the various registers in 8085.

Question 2. What Are The Various Flags Used In 8085?
Answer : Sign flag, Zero flag, Auxillary flag, Parity flag, Carry flag.

Question 3. What Is Stack Pointer?
Answer :
Stack pointer is a special purpose 16-bit register in the Microprocessor, which holds the address of the top of the stack.

Question 4. What Is Program Counter?
Answer :
Program counter holds the address of either the first byte of the next instruction to be fetched for execution or the address of the next byte of a multi byte instruction, which has not been completely fetched. In both the cases it gets incremented automatically one by one as the instruction bytes get fetched. Also Program register keeps the address of the next instruction.

Question 5. Which Stack Is Used In 8085?
Answer :
LIFO (Last In First Out) stack is used in 8085.In this type of Stack the last stored information can be retrieved first.

Question 6. What Happens When Hlt Instruction Is Executed In Processor?
Answer : The Micro Processor enters into Halt-State and the buses are tri-stated.

Question 7. What Is Meant By A Bus?
Answer : A bus is a group of conducting lines that carriers data, address, & control signals.

Question 8. What Is Tri-state Logic?
Answer :
Three Logic Levels are used and they are High, Low, High impedance state. The high and low are normal logic levels & high impedance state is electrical open circuit conditions. Tri-state logic has a third line called enable line.

Question 9. Give An Example Of One Address Microprocessor?
Answer : 8085 is a one address microprocessor.

Question 11. What Are Hardware Interrupts?
Answer : TRAP, RST7.5, RST6.5, RST5.5, INTR.

Question 12. What Are Software Interrupts?
Answer : RST0, RST1, RST2, RST3, RST4, RST5, RST6, RST7.

Question 13. Which Interrupt Has The Highest Priority?
Answer : TRAP has the highest priority.

Question 14. Name 5 Different Addressing Modes?
Answer : Immediate, Direct, Register, Register indirect, Implied addressing modes.

Question 15. How Many Interrupts Are There In 8085?
Answer : There are 12 interrupts in 8085.

Question 16. In 8085 Which Is Called As High Order / Low Order Register?
Answer : Flag is called as Low order register & Accumulator is called as High order Register.

Question 17. What Are Input & Output Devices?
Answer : Keyboards, Floppy disk are the examples of input devices. Printer, LED / LCD display, CRT Monitor are the examples of output devices.

Question 18. Can An Rc Circuit Be Used As Clock Source For 8085?
Answer :
Yes, it can be used, if an accurate clock frequency is not required. Also, the component cost is low compared to LC or Crystal.

Question 19. Why Crystal Is A Preferred Clock Source?

Answer :

Because of high stability, large Q (Quality Factor) & the frequency that doesn't drift with aging. Crystal is used as a clock source most of the times.

Question 20. What Does Quality Factor Mean?

Answer :

The Quality factor is also defined, as Q. So it is a number, which reflects the lossness of a circuit. Higher the Q, the lower are the losses.

Question 21. What Are Level-triggering Interrupt?

Answer :

RST 6.5 & RST 5.5 are level-triggering interrupts

Question 22. How Can Signals Be Classified For The 8085 Microprocessor?

Answer :

The signals of the 8085 microprocessor based on their functions can be classified into 7 categories namely:

Frequency and power signals	Address and data buses
The control bus	Interrupt Signals
Serial Input / Output signals	DMA signals
Reset Signals	

Question 23. Mention The Various Functional Blocks Of The 8085 Microprocessor.?

Answer :

The various functional blocks of the 8085 microprocessor are:

Registers	Arithmetic logic unit
Address buffer	Increment / decrement address latch
Interrupt control	Serial I/O control
Timing and control circuitry	Instructions decoder and machine cycle encoder.

Question 24. Mention The Steps In The Interrupt Driven Mode Of Data Transfer.?

Answer :

The steps followed in this type of transfer are as follows:

The peripheral device would request for an interrupt.
The request acknowledgement for the transfer is issued at the end of instruction execution.
Now the ISS routine is initialized, The PC has the return address which is now stored in the stack.
Now data transfer is managed and coordinates by the ISS.
Again the Interrupt system is enabled and the above steps are repeated.

Question 25. Write A Program That Will Store The Contents Of An Accumulator And Flag Register At Locations 2000h And 2001h.?

Answer :

By making use of the Push & Pop instructions the program can be written as:

LXISP, 4000H - this step initiates the SP at 4000h.
PUSH PSW - the contents of the accumulator and flag are pushed into the stack.

POP B	MOV A, B	STA 2000H
MOV A, C	STA 2001H	HLT

Question 26. Classify Interrupts On The Basis Of Signals. State Their Differences.?

Answer :

On the basis of level the signals can be classified into the following types:

Single level interrupts
Multi level interrupts
The differences between them are as follows:
For single the interrupts are manages through a single ping whereas in multi they are managed by multiple pins.
For single level interrupts polling is essential whereas for multi level it is not necessary.
Single level interrupts are much slower than multi level interrupts.

Question 27. What Are The Two Major Differences Between Intr And Other Interrupts (Hardware)?
Answer :
The two major differences between INTR and the other hardware interrupts are as follows:
All the hardware interrupts are vectored interrupts but the INTR interrupt is not so. An INTR interrupt will always get the address of a subroutine from the device (external) itself. In the case of other hardware interrupts the interrupts come from the call generated by the processor at a already determined vector location.
In case of the INTR interrupt the return address of an interrupt is never saved but in the case of other hardware interrupts the locations is saved in the stack.
Question 28. Explain Briefly The Trap Input For The 8085.?
Answer :
The TRAP input is sensitive to both edge and level.
The pulse width for this signal should be in excess as compared to the normal noise width.
A second trap will never be able to respond for the second time as it requires the first trap to go through a high to low transition.
The pulse widths are wider than normal widths so as to prevent unwanted false triggers.
Question 29. Explain Briefly What Happens When The Intr Signal Goes High In The 8085?
Answer :
The INTR is a maskable interrupt for the 8085. It has the lowest priority and is also non vectored.
When this INTR signal goes into the high state the following things occur / take place:
For every instruction that is executed the 8085 checks the status of this interrupt./
Till an instruction is completed the signal of INTR will remain high. Once an instruction is completed the processor sends an acknowledgement signal INTA.
As soon as the INTA signal goes low a new opcode is placed on the data bus for transfer.
Once the new instruction is received the processor saves the address of new instruction into the STACK and an interrupt service subroutine begins.
Question 30. Explain All The Addressing Modes Of The 8085 With The Help Of Examples.?
Answer :
The various types of addressing modes of the 8085 are as follows:
Direct addressing: The instructions in itself contain the opearand. For ex. STA5513H or in/out instructions such as IN PORT C.
Register addressing: The general purpose registers contain the operands. For ex. MOV A, B;
Register indirect addressing: This involves the use of register pairs instead of a single register. For ex MOV A, M; ADD M.
Immediate addressing: The example are MVI A, 07; or ADI 0F etc.
Implicit addressing: this form of addressing contains no operands. For ex. RAR, CMA etc.

Display (LED)

1. The full form of LCD is _____
a) Liquid Crystal Display
b) Liquid Crystalline Display
c) Logical Crystal Display
d) Logical Crystalline Display
View Answer
Answer: a
Explanation: The full form of LCD is “Liquid Crystal Display”. They provide thinner displays as compared to Cathode Ray Tubes.

2. The optical properties of liquid crystals depend on the direction of _____
a) Air
b) Solid
c) Light
d) Water
View Answer
Answer: c
Explanation: The optical properties of liquid crystals depend on the direction of light travels through a layer of the material.

3. By which properties, the orientation of molecules in a layer of liquid crystals can be changed?
a) Magnetic field
b) Electric field
c) Electromagnetic field
d) Gallois field
View Answer

4. Electro-optical effect is produced in _____
a) LED
b) LCD
c) OFC
d) OLED
View Answer
Answer: b
Explanation: An electric field (induced by a small electric voltage) can change the orientation of molecules in a layer of liquid crystal and thus affect its optical properties. Such a process is termed an electro-optical effect, and it forms the basis for LCDs.

5. The direction of electric field in an LCD is determined by _____
a) the molecule's chemical structure
b) Crystalline surface structure
c) Molecular Orbital Theory
d) Quantum Cellular Automata
View Answer
Answer: a
Explanation: For LCDs, the change in optical properties results from orienting the molecular axes either along or perpendicular to the applied electric field, the preferred direction being determined by the details of the molecule's chemical structure.

6. The first LCDs became commercially available in _____
a) 1950s
b) 1980s
c) 1960s
d) 1970s
View Answer
Answer: c
Explanation: The first LCDs became commercially available in the late 1960s and were based on a light-scattering effect known as the dynamic scattering mode.

7. LCDs operate from a voltage ranges from _____
a) 3 to 15V
b) 10 to 15V
c) 10V
d) 5V
View Answer
Answer: a
Explanation: LCDs operate from a voltage ranges from 3 to 15V rms. They provide thinner displays as compared to Cathode Ray Tubes.

8. LCDs operate from a frequency ranges from _____
a) 10Hz to 60Hz
b) 50Hz to 70Hz
c) 30Hz to 60Hz
d) None of the Mentioned
View Answer
Answer: c
Explanation: LCDs operate from a frequency ranges from 30Hz to 60Hz. LCDs operate from a voltage ranges from 3 to 15V rms. They provide thinner displays as compared to Cathode Ray Tubes.

9. In 7 segment display, how many LEDs are used?
a) 8
b) 7
c) 10
d) 9
View Answer
Answer: b
Explanation: There are 7 LEDs used in a 7 segment display. 7 segment displays are used for displaying decimal numerals which are comparatively convenient to dot matrix displays.

10. What is backplane in LCD?
a) The ac voltage applied between segment and a common element
b) The dc voltage applied between segment and a common element
c) The amount of power consumed
d) For adjusting the intensity of the LCD
View Answer
Answer: a
Explanation: The ac voltage applied between segment and a common element is called the backplane(bp). In which each segment is driven by an EX-OR gate.

11. A light emitting diode is _____
a) Heavily doped
b) Lightly doped
c) Intrinsic semiconductor
d) Zener diode
View Answer
Answer: a
Explanation: A light emitting diode, LED, is heavily doped. It works under forward biased conditions. When the electrons recombine with holes, the energy released in the form of photons causes the production of light.

12. Which of the following materials can be used to produce infrared LED?
a) Si
b) GaAs
c) CdS
d) PbS
View Answer
Answer: b
Explanation: GaAs has an energy band gap of 1.4 eV. It can be used to produce infrared LED. Various other combinations can be used to produce LED of different colors.

13. The reverse breakdown voltage of LED is very low.
a) True
b) False
View Answer
Answer: a
Explanation: The reverse breakdown voltages of LEDs are very low, typically around 5 V. So, if access voltage is provided, they will get fused.

14. What should be the band gap of the semiconductors to be used as LED?
a) 0.5 eV
b) 1 eV
c) 1.5 eV
d) 1.8 eV
View Answer
Answer: d
Explanation: Semiconductors with band gap close to 1.8 eV are ideal materials for LED. They are made with semiconductors like GaAs, GaAsP etc.

15. What should be the biasing of the LED?
a) Forward bias
b) Reverse bias
c) Forward bias than Reverse bias
d) No biasing required
View Answer
Answer: a
Explanation: The LED works when the p-n junction is forward biased i.e., the p- side is connected to the positive terminal and n-side to the negative terminal.

16. Which process of the Electron-hole pair is responsible for emitting of light?
a) Generation
b) Movement
c) Recombination
d) Diffusion
View Answer
Answer: c
Explanation: When the recombination of electrons with holes takes place, the energy is released in the form of photon. This photon is responsible for the emission of light.

17. What is the bandwidth of the emitted light in an LED?
a) 1 nm to 10 nm
b) 10 nm to 50 nm
c) 50 nm to 100 nm
d) 100 nm to 500 nm
View Answer
Answer: b
Explanation: The bandwidth of the emitted light is 10 nm to 50 nm. Thus, the emitted light is nearly (but not exactly) monochromatic.

18. Which of the following is not a characteristic of LED?
a) Fast action
b) High Warm-up time
c) Low operational voltage
d) Long life
View Answer
Answer: b
Explanation: The warm-up time required should be lower so that the lighting action can take place faster. This is one of the advantages LED have over incandescent lamps.

19. Q. AC LED - What is it?
A. It is a LED with a built in converter.
20. Q. Light Emitting Diode (LED) - what is it?
A. LEDs are semiconductors, diodes in particular.
A LED should have high hole mobility inside the semiconductor crystal emitting the light. But high hole mobility also means that the full content of any section of the crystal is unpredictable to a large extent. So your bright LED is quite unpredictable as to exact Resistance (R), also.See Ohm's Law for Resistance's role
21. Q. I have a "5 Volt LED" - what does it mean?
A. Such specification refers to the maximum operating voltage. As a rule the LED described should mostly operate below that maximum. 5 Volt is its top bearable limit also called the **maximum operating point**. It is not to be reached or reached only occasionally for very short periods of time.
22. Q. LED array - what is it?
A. LEDs can be single chip based, or LEDs can populate many independent LED chips built as one package called array.
23. Q. Adaptor (or converter) - What is it and Why I need it with my LED?
A. Adaptors are **also called converters or power adapters**. For low voltage LED lights (12V, 24V) you would use an adaptor. It **transforms your high voltage** main (120V, 240V etc) to the low voltage at which your LED can operate.
24. Q. Driver - what is it and what type should I use with my LED?
A. A LED driver is the circuitry (a self-contained supply of power) that powers your light source with the needed drive current. But this current is still quite lumpy so we need to finetune the output that reaches the LED. For this to be accomplished we also need a **resistor** built in the driver circuitry.
Drivers should be current regulated, so they deliver a consistent current over a range of load voltages.Actually, your LED can be **overdriven** past their continuous operating currents and generate higher peak light outputs (within some limits) by operating them at a **reduced duty cycle**. This will hold the average current and therefore chip heating within the continuous operating limits.
25. Q. Can I use a dimmer with my LED?
A. The short answer is No. The longer? Yes and no. You may not use an external dimmer if your LED is not equipped with an internal dimmer.
26. Q. LED internal dimmer - what is it and how it works?
A. Internal dimmer is a LED driver equipped with a dimming control. A LED driver can create dimming by by way of pulse width modulation (called PWM) circuits.
27. Q. Resistor - what type should I use with my LED?
A. Resistors regulate current to keep it to a limit or an acceptable range before it reaches your LED. Current and voltage in a resistor are linearly related (see Ohm's Law.) For this reason it is best to use a current-limiting resistor instead of a voltage-limiting resistor. -- might be pricier.
28. Q. LEDs resistance - what is it and how it behaves.
A. Unlike conductor materials, LEDs are semiconductors and don't have one fixed resistance, they have varying resistances. The current flowing in an LED is an exponential function of voltage across the LED. This means that a small change in extra voltage can result in large change of current.

29. Q. If I know the exact voltage across my LED can I determine the exact current? If so, how?

A. No you can't unfortunately, not exactly. If you know the voltage across the LED that doesn't mean you know the exact current flowing thru your LED at that time. LEDs are funny things. They have high mobility inside the semiconductor crystal emitting the light. This means they are quite unpredictable as to finding out the exact resistance at a certain voltage - therefore the exact current flowing thru your LED. All you can do is spot checks in various discrete stages. At this stage we do not have a formula. Once we'll have one, it'll still likely to be too complex to be used by an average do-it-yourselfer.

30. Q. LED meltdown - what is it and how it "works"?

A. The thermal runaway effect ultimately killing your LED is popularly called LED meltdown. The current through the **junction** will tend to increase as the temperature rises. This in turn will heat you junction further. Beyond a certain maximum point this can not be reversed. Your LED will melt down and die. Current-regulated drivers can counter this tendency whereas voltage-regulated drivers tend not to.

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