

Unit 4 - Week 2

Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

- Salient Features of Modern Microcontrollers
- Salient Features of Modern Microcontrollers Continued
- Elements of Microcontroller Ecosystem
- Feedback Form
- Quiz : Assignment 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Lecture PPT

Download Videos

Assignment Solutions

Live Session

Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-09-30, 23:59 IST.

1) Which of the following functions is/are typically not expected from a microcontroller? 1 point

- Read Digital Inputs
- Measure time between two events
- Store data
- Run an operating system like Windows

No, the answer is incorrect.
Score: 0

Accepted Answers:
Run an operating system like Windows

2) Which of the following statements is FALSE about modern microcontrollers? 1 point

- Pins are fully programmable, i.e. they can be configured as input or output.
- Each pin offers multiple functions one of which can be selected.
- Input pins can either have weak pull up, strong pull up or tri state capability.
- Output pins can drive high current (more than 100 mA) loads directly.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Output pins can drive high current (more than 100 mA) loads directly.

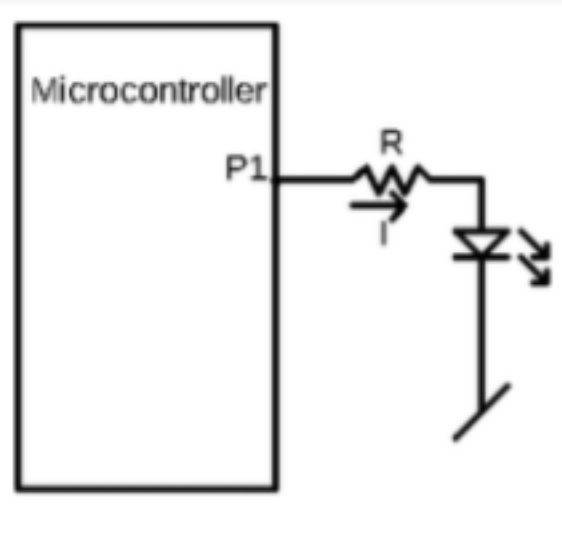
3) With the data given below, guess the colour of LED. 1 point

$$V_{OH} = 4.5V$$

$$V_{OL} = 0.5V$$

$$I = 14mA$$

$$R = 200\ \text{ohms}$$



- Green
- Red
- Blue
- White

No, the answer is incorrect.
Score: 0

Accepted Answers:
Red

4) Which of the following is/are TRUE about MSP430G2553? 1 point

- 64 bit microprocessor
- 16KB SRAM, 512B Flash
- RISC architecture
- Harvard Memory architecture

No, the answer is incorrect.
Score: 0

Accepted Answers:
RISC architecture

5) What is the significance of lock in program memory of a microcontroller? 1 point

- To protect the code so that it can't be rewritten.
- To secure the contents of program memory so that nobody can read it.
- To give access to only certain people to run the code.
- All of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
To protect the code so that it can't be rewritten.
To secure the contents of program memory so that nobody can read it.

6) Which of the following is/are TRUE about "clock scalability" in a microcontroller? 1 point

- It is the same as overclocking.
- It means the system clock frequency can be altered at run time.
- It helps in saving power.
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
It means the system clock frequency can be altered at run time.
It helps in saving power.

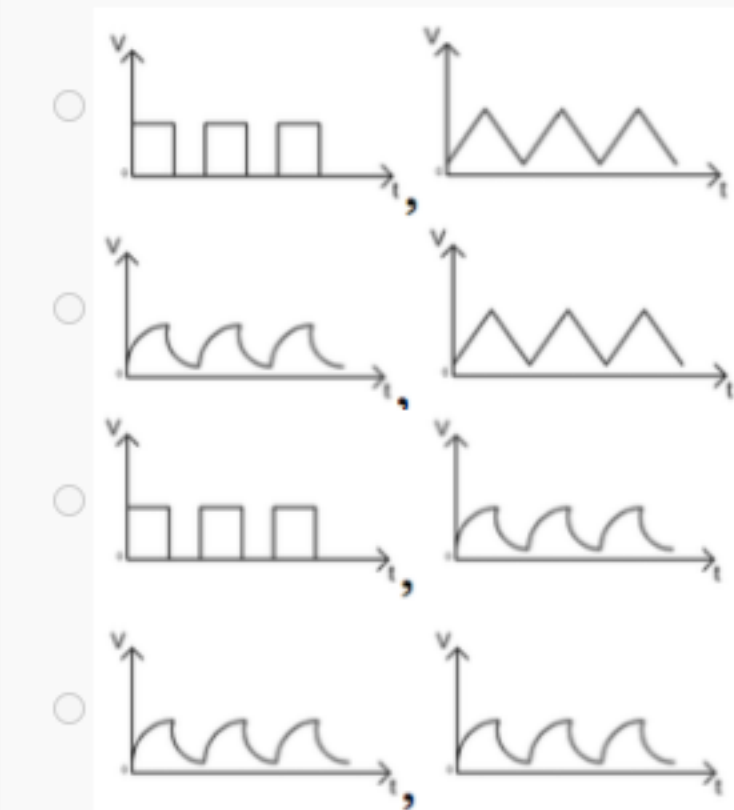
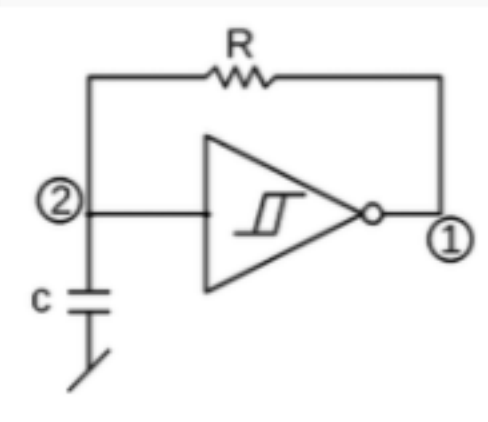
7) Suppose a microcontroller has an 8-bit timer and the clock applied to it has frequency of 10KHz with its high time as 20us. What is the maximum time that can be measured? 1 point

- 5.120ms
- 2.048ms
- 20.480ms
- 25.6ms

No, the answer is incorrect.
Score: 0

Accepted Answers:
25.6ms

8) Which of the following correctly represents the voltage waveforms observed at node 1 and node 2 in the circuit shown below? 1 point

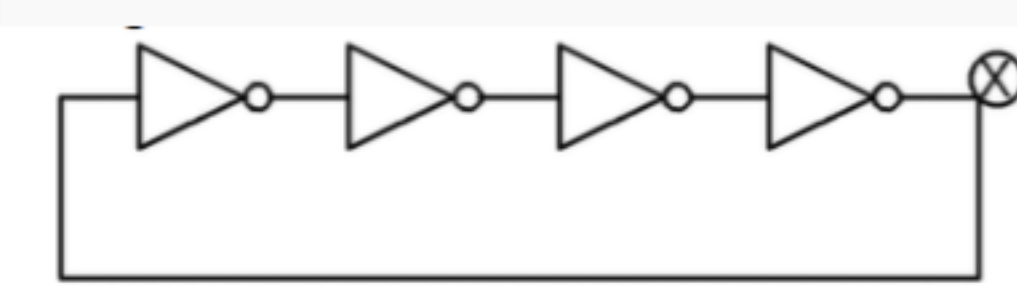


No, the answer is incorrect.
Score: 0

Accepted Answers:



9) In the diagram shown below, what is the frequency of the signal generated at node X if the delay of each NOT gate is 2ns? 1 point



- 125 MHz
- 625 MHz
- 62.5 MHz
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

10) A CMOS wrist watch of resolution 1s is to be designed with the only consideration that the battery should last as long as possible. Which of the following crystals in the inventory would you choose to make it? 1 point

- 32,768 Hz
- 8,192 Hz
- 65,536 Hz
- 16,384 Hz

No, the answer is incorrect.
Score: 0

Accepted Answers:
8,192 Hz