

161

Which pin configuration is used to connect a 7-segment display to 8051?

Option_a: GPIO pins

Option_b: ADC pins

Option_c: PWM pins

Option_d: UART pins

correct_option: GPIO pins

162

How many segments does a 7-segment display consist of?

Option_a: 5

Option_b: 6

Option_c: 7

Option_d: 8

correct_option: 7

163

What additional segment is present in an 8-segment display?

Option_a: Decimal Point

Option_b: Colon

Option_c: Comma

Option_d: Extra Digit

correct_option: Decimal Point

164

Which data type is generally used to send values to a 7-segment display?

Option_a: Integer

Option_b: Character

Option_c: Binary

Option_d: Float

correct_option: Binary

165

In 7-segment displays, which configuration turns on all segments?

Option_a: 0xFF

Option_b: 0x00

Option_c: 0x7F

Option_d: 0xFE

correct_option: 0xFF

166

Which sensor is commonly used in digital thermometer projects?

Option_a: LM35

Option_b: DHT11

Option_c: MQ3

Option_d: LDR

correct_option: LM35

167

What is the typical range of the LM35 temperature sensor?

Option_a: 0°C to 50°C

Option_b: -55°C to 150°C

Option_c: -20°C to 100°C

Option_d: 0°C to 100°C
correct_option: -55°C to 150°C

168

What is the voltage output of the LM35 sensor for 25°C?

Option_a: 25 mV
Option_b: 250 mV
Option_c: 2.5 V
Option_d: 2500 mV
correct_option: 250 mV

169

Which component is essential for analog-to-digital conversion in a digital thermometer?

Option_a: ADC
Option_b: DAC
Option_c: GPIO
Option_d: PWM
correct_option: ADC

170

Which of the following microcontrollers supports ADC?

Option_a: 8051
Option_b: PIC
Option_c: LPC2148
Option_d: All of the above
correct_option: All of the above

171

Which peripheral is used to control LED flashing in LPC2148?

Option_a: GPIO
Option_b: ADC
Option_c: UART
Option_d: Timer
correct_option: GPIO

172

How many General Purpose Input/Output (GPIO) ports does LPC2148 have?

Option_a: 1
Option_b: 2
Option_c: 3
Option_d: 4
correct_option: 2

173

Which register is used to set the direction of GPIO pins in LPC2148?

Option_a: PINSEL
Option_b: IOSET
Option_c: IODIR
Option_d: IOCLR
correct_option: IODIR

174

Which of the following instructions turns an LED on in LPC2148?

Option_a: IOSET |= 0x01;

Option_b: IOCLR |= 0x01;
Option_c: IODIR |= 0x00;
Option_d: IOCLR &= ~0x01;
correct_option: IOSET |= 0x01;

175

What is the operating voltage of LEDs in the LPC2148 kit?

Option_a: 3.3 V
Option_b: 5 V
Option_c: 1.8 V
Option_d: 9 V
correct_option: 3.3 V

176

How many ADC channels are available in LPC2148?

Option_a: 4
Option_b: 6
Option_c: 8
Option_d: 12
correct_option: 6

177

Which ADC resolution is supported by LPC2148?

Option_a: 8-bit
Option_b: 10-bit
Option_c: 12-bit
Option_d: 16-bit
correct_option: 10-bit

178

Which peripheral in LPC2148 allows converting analog signals to digital?

Option_a: DAC
Option_b: ADC
Option_c: PWM
Option_d: Timer
correct_option: ADC

179

Which register in LPC2148 stores the converted ADC value?

Option_a: ADCR
Option_b: ADSTAT
Option_c: ADDR
Option_d: ADGDR
correct_option: ADGDR

180

How is the ADC clock frequency configured in LPC2148?

Option_a: By setting ADC registers
Option_b: Using I2C peripheral
Option_c: Using a GPIO pin
Option_d: By configuring UART
correct_option: By setting ADC registers

181

How many control pins are required to connect a single 7-segment display?

Option_a: 7

Option_b: 8

Option_c: 10

Option_d: 11

correct_option: 8

182

Which hexadecimal value represents the number "5" on a common cathode 7-segment display?

Option_a: 0x6D

Option_b: 0x5B

Option_c: 0x4F

Option_d: 0x3E

correct_option: 0x6D

183

How do you represent the alphabet "A" on a 7-segment display?

Option_a: 0x77

Option_b: 0x7C

Option_c: 0x39

Option_d: 0x5E

correct_option: 0x77

184

Which mode must be configured to display a decimal number on 7-segment LED using LPC2148?

Option_a: Input Mode

Option_b: Output Mode

Option_c: Interrupt Mode

Option_d: ADC Mode

correct_option: Output Mode

185

What is the key difference between a common anode and common cathode 7-segment display?

Option_a: Common cathode connects all anodes to ground

Option_b: Common anode connects all cathodes to ground

Option_c: Common cathode connects all cathodes to ground

Option_d: Both configurations connect to Vcc

correct_option: Common cathode connects all cathodes to ground

186

What is the hexadecimal code to display the number "1" on a common cathode 7-segment display?

Option_a: 0x06

Option_b: 0x3F

Option_c: 0x5B

Option_d: 0x4F

correct_option: 0x06

187

What kind of circuit is necessary for driving a 7-segment display with an 8051 microcontroller?

Option_a: Pull-down resistor circuit

Option_b: Multiplexing circuit

Option_c: PWM driver circuit

Option_d: Timer circuit
correct_option: Multiplexing circuit

188

Which Proteus component is used to simulate the 8051 microcontroller?

Option_a: AT89C51
Option_b: PIC16F877A
Option_c: STM32F103
Option_d: ARM Cortex M3
correct_option: AT89C51

189

What is the purpose of a current-limiting resistor in a 7-segment display circuit?

Option_a: Protect the microcontroller
Option_b: Control brightness
Option_c: Prevent overheating
Option_d: All of the above
correct_option: All of the above

190

In Proteus simulation, which tool is used to observe real-time values of signals?

Option_a: Logic Analyzer
Option_b: Oscilloscope
Option_c: Virtual Terminal
Option_d: Digital Display
correct_option: Oscilloscope

191

Which unit is used to display the temperature reading in a digital thermometer?

Option_a: Fahrenheit
Option_b: Kelvin
Option_c: Celsius
Option_d: Rankine
correct_option: Celsius

192

What is the typical operating voltage range of LM35?

Option_a: 1.5V - 5V
Option_b: 4V - 30V
Option_c: 2.7V - 3.3V
Option_d: 0V - 10V
correct_option: 4V - 30V

193

What is the output voltage of LM35 for a temperature of 100°C?

Option_a: 100 mV
Option_b: 500 mV
Option_c: 1 V
Option_d: 10 V
correct_option: 1 V

194

What component can be used to display temperature readings in real-time?

Option_a: LCD display

Option_b: Seven-segment display
Option_c: LED array
Option_d: Both Option_a and Option_b
correct_option: Both Option_a and Option_b

195

What is the accuracy of the LM35 temperature sensor?

Option_a: $\pm 1^{\circ}\text{C}$
Option_b: $\pm 0.5^{\circ}\text{C}$
Option_c: $\pm 2^{\circ}\text{C}$
Option_d: $\pm 5^{\circ}\text{C}$
correct_option: $\pm 0.5^{\circ}\text{C}$

196

Which programming language is most commonly used to program the LPC2148?

Option_a: Python
Option_b: C
Option_c: Java
Option_d: Assembly
correct_option: C

197

Which timer mode is often used for generating delays for LED flashing?

Option_a: PWM Mode
Option_b: Interrupt Mode
Option_c: Capture Mode
Option_d: Timer Mode
correct_option: Timer Mode

198

Which register is used to start a timer in LPC2148?

Option_a: T0TCR
Option_b: T1PR
Option_c: T0IR
Option_d: T0PC
correct_option: T0TCR

199

What happens if the delay in the LED flashing code is set too short?

Option_a: LED will not light up
Option_b: LED will flicker too fast to observe
Option_c: LED will burn out
Option_d: LED will remain constantly on
correct_option: Option_b

200

What is the clock frequency of LPC2148 by default?

Option_a: 16 MHz
Option_b: 60 MHz
Option_c: 12 MHz
Option_d: 48 MHz
correct_option: 12 MHz

201

Which analog input pin is typically used first in ADC configuration?

Option_a: AD0.0

Option_b: AD0.1

Option_c: AD1.1

Option_d: AD1.2

correct_option: AD0.0

202

What is the maximum input voltage for ADC in LPC2148?

Option_a: 2.5V

Option_b: 3.3V

Option_c: 5V

Option_d: 1.8V

correct_option: 3.3V

203

Which register in LPC2148 indicates the status of ADC conversion?

Option_a: ADSTAT

Option_b: ADDR

Option_c: ADGSR

Option_d: ADGDR

correct_option: ADGDR

204

What value is returned by ADC in LPC2148 if the input voltage is 1.65V, assuming a 10-bit resolution?

Option_a: 256

Option_b: 512

Option_c: 768

Option_d: 1023

correct_option: 512

205

Which peripheral helps to convert physical quantities such as temperature into ADC input?

Option_a: Sensors

Option_b: GPIO

Option_c: UART

Option_d: I2C

correct_option: Sensors

206

Which control technique can be used to drive multiple 7-segment displays with fewer pins?

Option_a: Multiplexing

Option_b: Direct control

Option_c: PWM

Option_d: UART communication

correct_option: Multiplexing

207

Which 7-segment display pattern corresponds to the number "0"?

Option_a: 0x3F

Option_b: 0x06

Option_c: 0x5B

Option_d: 0x7F
correct_option: 0x3F

208

How is the brightness of a 7-segment display controlled?

Option_a: By controlling supply voltage
Option_b: Using PWM
Option_c: Using GPIO speed
Option_d: Adjusting current flow
correct_option: Using PWM

209

In LPC2148, which interface is commonly used for interfacing 7-segment displays?

Option_a: UART
Option_b: I2C
Option_c: GPIO
Option_d: SPI
correct_option: GPIO

210

Which number format requires the least segment activation on a 7-segment display?

Option_a: Decimal 8
Option_b: Decimal 0
Option_c: Decimal 1
Option_d: Decimal 9
correct_option: Decimal 1

211

What is the purpose of using a common anode or common cathode configuration in a 7-segment display?

Option_a: To control individual LED segments
Option_b: To simplify circuit design
Option_c: To enable serial communication
Option_d: To reduce power consumption
correct_option: To simplify circuit design

212

Which register in LPC2148 is typically used to set pins as output for driving a 7-segment display?

Option_a: PINSEL
Option_b: IOSET
Option_c: IODIR
Option_d: IOCLR
correct_option: IODIR

213

Which hex code corresponds to displaying the number "7" on a 7-segment display?

Option_a: 0x07
Option_b: 0x79
Option_c: 0x77
Option_d: 0x3F
correct_option: 0x07

214

In LPC2148, what is the clock source for running the 7-segment display?

Option_a: On-chip oscillator

Option_b: PLL
Option_c: GPIO clock
Option_d: ADC clock
correct_option: On-chip oscillator

215

Which component in Proteus can be used to simulate the 7-segment display output?

Option_a: Virtual Terminal
Option_b: Digital Display
Option_c: LED Array
Option_d: 7-SEG-COM-CATH
correct_option: 7-SEG-COM-CATH

216

What happens when the timer in LPC2148 reaches its match value?

Option_a: Timer resets
Option_b: Timer stops
Option_c: Interrupt is generated
Option_d: LED turns off
correct_option: Interrupt is generated

217

Which register in LPC2148 is used to load the match value for the timer?

Option_a: T0MR0
Option_b: T0TCR
Option_c: T0IR
Option_d: T0PR
correct_option: T0MR0

218

What frequency is generated if the timer runs at 12 MHz and the match value is set to 12000?

Option_a: 10 Hz
Option_b: 1 kHz
Option_c: 1 Hz
Option_d: 100 Hz
correct_option: 1 Hz

219

Which of the following is an alternative method for flashing LEDs on LPC2148?

Option_a: Using PWM
Option_b: Using GPIO polling
Option_c: Using UART
Option_d: Using SPI
correct_option: Using GPIO polling

220

What happens when the match interrupt is not cleared in LPC2148?

Option_a: Timer continues normally
Option_b: Timer halts
Option_c: Interrupt keeps triggering
Option_d: Timer resets
correct_option: Interrupts keep triggering

221

Which resolution is typically supported by the internal ADC in LPC2148?

Option_a: 8-bit

Option_b: 10-bit

Option_c: 12-bit

Option_d: 16-bit

correct_option: 10-bit

222

Which peripheral bus controls the ADC module in LPC2148?

Option_a: AHB

Option_b: APB

Option_c: I2C

Option_d: SPI

correct_option: APB

223

Which flag indicates that the ADC conversion is complete in LPC2148?

Option_a: DONE

Option_b: READY

Option_c: ADC

Option_d: COMPLETE

correct_option: DONE

224

What value will the ADC return if the input voltage is 3.3V, assuming 10-bit resolution?

Option_a: 1023

Option_b: 512

Option_c: 2047

Option_d: 255

correct_option: 1023

225

Which of the following can be connected to the ADC input to measure analog signals?

Option_a: Potentiometer

Option_b: Temperature Sensor

Option_c: Light Sensor

Option_d: All of the above

correct_option: Temperature Sensor

226

What is the purpose of using a voltage divider circuit with LM35?

Option_a: To stabilize current

Option_b: To step down voltage

Option_c: To adjust output voltage range

Option_d: To regulate input voltage

correct_option: To adjust output voltage range

227

Which type of ADC is typically used for reading LM35 output in a microcontroller?

Option_a: Flash ADC

Option_b: Successive Approximation ADC

Option_c: Delta-Sigma ADC

Option_d: Dual-Slope ADC
correct_option: Successive Approximation ADC

228

Which part of the LM35 sensor indicates its operating temperature range?

Option_a: Datasheet
Option_b: Calibration curves
Option_c: Output specifications
Option_d: Pin configuration
correct_option: Datasheet

229

How can temperature values be displayed on a Proteus LCD module?

Option_a: Direct binary values
Option_b: ASCII-converted values
Option_c: Binary-to-decimal converter
Option_d: Digital signal processor
correct_option: ASCII-converted values

230

What happens to the LM35 output voltage as temperature decreases?

Option_a: Voltage increases
Option_b: Voltage decreases
Option_c: Voltage remains constant
Option_d: Voltage fluctuates
correct_option: Voltage decreases

231

Which tool is primarily used to debug LPC2148 microcontroller programs?

Option_a: Keil uVision
Option_b: Arduino IDE
Option_c: MPLAB X
Option_d: Visual Studio Code
correct_option: Keil uVision

232

What file format is required to upload programs to the LPC2148?

Option_a: .bin
Option_b: .hex
Option_c: .elf
Option_d: .exe
correct_option: .hex

233

Which communication protocol is often used for downloading firmware onto LPC2148?

Option_a: I2C
Option_b: UART
Option_c: SPI
Option_d: CAN
correct_option: UART

234

Which of the following is a common compiler for ARM-based microcontrollers?

Option_a: GCC

Option_b: Clang
Option_c: IAR
Option_d: All of the above
correct_option: All of the above

235

What is the main advantage of using the Proteus simulation software?

Option_a: Real-time debugging
Option_b: Hardware emulation
Option_c: Cost-effectiveness in testing
Option_d: All of the above
correct_option: All of the above

236

What is the typical power supply voltage for the LPC2148 microcontroller?

Option_a: 3.3V
Option_b: 5V
Option_c: 12V
Option_d: 1.8V
correct_option: 3.3V

237

Which debugging technique is most suitable for LPC2148 when using Keil uVision?

Option_a: Step-by-step execution
Option_b: Breakpoint analysis
Option_c: Register inspection
Option_d: All of the above
correct_option: All of the above

238

What is the maximum resolution of the timer/counter peripheral in LPC2148?

Option_a: 8-bit
Option_b: 16-bit
Option_c: 32-bit
Option_d: 64-bit
correct_option: 32-bit

239

Which of the following peripherals is commonly used to interface a 7-segment display with LPC2148?

Option_a: GPIO
Option_b: ADC
Option_c: PWM
Option_d: UART
correct_option: GPIO

240

What is the primary purpose of configuring the PLL (Phase-Locked Loop) in LPC2148?

Option_a: To generate higher clock frequencies
Option_b: To manage power efficiency
Option_c: To control I/O operations
Option_d: To optimize GPIO speed
correct_option: To generate higher clock frequencies