81  
Which of the following is the primary advantage of using a DAC in waveform generation with 8051 in Proteus?  
Option\_a: High-speed processing  
Option\_b: Precise analog signal output  
Option\_c: Reduced power consumption  
Option\_d: Improved digital signal accuracy  
correct\_option: Precise analog signal output

82  
When generating a triangular wave in Proteus, which component is used to smooth out the signal?  
Option\_a: Diode  
Option\_b: Resistor  
Option\_c: Capacitor  
Option\_d: Transistor  
correct\_option: Capacitor

83  
In an 8051-based stepper motor control circuit, what is the role of the ULN2003 driver?  
Option\_a: To increase the step angle  
Option\_b: To control the direction of rotation  
Option\_c: To amplify the current for motor operation  
Option\_d: To convert analog signals to digital  
correct\_option: To amplify the current for motor operation

84  
Which type of waveform is typically not suitable for driving a stepper motor in Proteus?  
Option\_a: Pulse waveform  
Option\_b: Square waveform  
Option\_c: Sine waveform  
Option\_d: Triangular waveform  
correct\_option: Sine waveform

85  
What is the resolution of a typical 8-bit DAC used with an 8051 microcontroller in Proteus?  
Option\_a: 8-bit  
Option\_b: 12-bit  
Option\_c: 16-bit  
Option\_d: 4-bit  
correct\_option: 8-bit

86  
In a Proteus simulation, how is the rotational direction of a stepper motor changed?  
Option\_a: By changing the power supply  
Option\_b: By reversing the sequence of control pulses  
Option\_c: By adjusting the motor resistance  
Option\_d: By increasing the pulse width  
correct\_option: By reversing the sequence of control pulses

87  
Which of the following is required to control a relay connected to an 8051 microcontroller in Proteus?  
Option\_a: BJT transistor  
Option\_b: Zener diode  
Option\_c: Capacitor  
Option\_d: LED  
correct\_option: BJT transistor

88  
What is the typical voltage level output of an 8051 microcontroller’s digital pin used to control a relay in Proteus?  
Option\_a: 5V  
Option\_b: 3.3V  
Option\_c: 12V  
Option\_d: 9V  
correct\_option: 5V

89  
In an 8051-controlled stepper motor simulation in Proteus, what defines the motor's speed?  
Option\_a: Voltage level  
Option\_b: Pulse frequency  
Option\_c: Load resistance  
Option\_d: Motor inductance  
correct\_option: Pulse frequency

90  
What role does a crystal oscillator serve in a digital clock circuit using Proteus?  
Option\_a: Acts as a display driver  
Option\_b: Maintains the clock's timing accuracy  
Option\_c: Converts digital signals to analog  
Option\_d: Controls the stepper motor speed  
correct\_option: Maintains the clock's timing accuracy

91  
When interfacing an LED with an 8051 microcontroller in Proteus, what component is typically required to limit the current?  
Option\_a: Diode  
Option\_b: Resistor  
Option\_c: Capacitor  
Option\_d: Inductor  
correct\_option: Resistor

92  
What is the most common frequency of a crystal oscillator used in 8051-based digital clock designs in Proteus?  
Option\_a: 8 MHz  
Option\_b: 12 MHz  
Option\_c: 16 MHz  
Option\_d: 20 MHz  
correct\_option: 12 MHz

93  
Which instruction in 8051 assembly language is commonly used to control the rotation sequence of a stepper motor in Proteus?  
Option\_a: MOV  
Option\_b: CPL  
Option\_c: SETB  
Option\_d: CLR  
correct\_option: MOV

94  
What component is typically used in Proteus to interface a 220V AC bulb with an 8051 microcontroller?  
Option\_a: LED  
Option\_b: BJT transistor  
Option\_c: Relay  
Option\_d: Diode  
correct\_option: Relay

95  
In a Proteus digital clock circuit, how is the real-time clock (RTC) module typically connected to the 8051 microcontroller?  
Option\_a: Through I2C protocol  
Option\_b: Through SPI protocol  
Option\_c: Directly to an LED  
Option\_d: Via USB  
correct\_option: Through I2C protocol

96  
For a Proteus simulation of a triangular wave generator, what component is responsible for inverting the signal in each cycle?  
Option\_a: Resistor  
Option\_b: Capacitor  
Option\_c: Op-amp  
Option\_d: Inductor  
correct\_option: Op-amp

97  
When using a stepper motor with 8051 in Proteus, which type of step angle will allow for smoother motor rotation?  
Option\_a: 90-degree steps  
Option\_b: 45-degree steps  
Option\_c: 30-degree steps  
Option\_d: 1.8-degree steps  
correct\_option: 1.8-degree steps

98  
In an 8051-based Proteus circuit, which of the following signals is most commonly used to drive a relay?  
Option\_a: Analog signal  
Option\_b: Pulse-width modulated signal  
Option\_c: Digital output signal  
Option\_d: Sine wave  
correct\_option: Digital output signal

99  
Which parameter is adjusted in Proteus to change the pulse frequency of a stepper motor controlled by the 8051?  
Option\_a: Voltage  
Option\_b: Pulse delay time  
Option\_c: Crystal oscillator frequency  
Option\_d: Input current  
correct\_option: Pulse delay time

100  
Which device is typically used to amplify the output of an 8051 microcontroller in Proteus to control higher current devices like relays and motors?  
Option\_a: Diode  
Option\_b: Transistor  
Option\_c: Capacitor  
Option\_d: Resistor  
correct\_option: Transistor

101  
In an 8051 microcontroller, which register is typically used for storing the delay count to control stepper motor speed in Proteus?  
Option\_a: A register  
Option\_b: B register  
Option\_c: TCON register  
Option\_d: TMOD register  
correct\_option: TMOD register

102  
What is the typical input voltage for the ULN2003 driver IC used in stepper motor interfacing with 8051 in Proteus?  
Option\_a: 3.3V  
Option\_b: 5V  
Option\_c: 12V  
Option\_d: 24V  
correct\_option: 5V

103  
Which 8051 microcontroller pin is commonly used to provide an external interrupt signal in a digital clock project in Proteus?  
Option\_a: P3.2  
Option\_b: P1.0  
Option\_c: P0.1  
Option\_d: P3.5  
correct\_option: P3.2

104  
Which relay component protects the 8051 microcontroller from back EMF in a Proteus simulation?  
Option\_a: Capacitor  
Option\_b: Diode  
Option\_c: Transistor  
Option\_d: Resistor  
correct\_option: Diode

105  
What command is used to turn ON an LED connected to the 8051 microcontroller in Proteus?  
Option\_a: CLR P1.0  
Option\_b: SETB P1.0  
Option\_c: MOV P1.0  
Option\_d: INC P1.0  
correct\_option: SETB P1.0

106  
In the Proteus simulation of a digital clock, what does the RTC module primarily track?  
Option\_a: Voltage  
Option\_b: Time  
Option\_c: Frequency  
Option\_d: Amplitude  
correct\_option: Time

107  
What is the main function of a capacitor in a DAC circuit for waveform generation in Proteus?  
Option\_a: Smooths the output signal  
Option\_b: Increases voltage level  
Option\_c: Provides power amplification  
Option\_d: Controls frequency  
correct\_option: Smooths the output signal

108  
Which step angle setting on a stepper motor results in a slower rotation in Proteus simulations?  
Option\_a: 90 degrees  
Option\_b: 1.8 degrees  
Option\_c: 45 degrees  
Option\_d: 15 degrees  
correct\_option: 1.8 degrees

109  
In an 8051-based triangular wave generator in Proteus, what type of filter is usually used for waveform shaping?  
Option\_a: High-pass filter  
Option\_b: Low-pass filter  
Option\_c: Band-pass filter  
Option\_d: Band-stop filter  
correct\_option: Low-pass filter

110  
Which of the following components is essential for interfacing a bulb with an 8051 in Proteus?  
Option\_a: Resistor  
Option\_b: Relay  
Option\_c: Inductor  
Option\_d: Capacitor  
correct\_option: Relay

111  
In a digital clock simulation using an 8051 microcontroller in Proteus, what unit is used to measure time intervals?  
Option\_a: Amperes  
Option\_b: Seconds  
Option\_c: Volts  
Option\_d: Hertz  
correct\_option: Seconds

112  
For accurate waveform generation in Proteus, which of these is crucial when configuring the DAC with 8051?  
Option\_a: High frequency  
Option\_b: Proper resolution  
Option\_c: Large voltage supply  
Option\_d: Low current  
correct\_option: Proper resolution

113  
What is the main function of a relay when interfaced with an 8051 microcontroller in Proteus?  
Option\_a: Acts as a logic gate  
Option\_b: Provides timing accuracy  
Option\_c: Controls high-power loads  
Option\_d: Generates clock signals  
correct\_option: Controls high-power loads

114  
Which instruction in 8051 assembly language is used to clear an output pin to turn off an LED in Proteus?  
Option\_a: MOV  
Option\_b: CLR  
Option\_c: SETB  
Option\_d: DJNZ  
correct\_option: CLR

115  
In a stepper motor simulation with 8051 in Proteus, which part dictates the motor's torque?  
Option\_a: Voltage level  
Option\_b: Sequence of steps  
Option\_c: Pulse width  
Option\_d: Current through windings  
correct\_option: Current through windings

116  
In a Proteus simulation of a digital clock, which display type is commonly used for time display?  
Option\_a: 7-segment display  
Option\_b: OLED display  
Option\_c: LCD display  
Option\_d: CRT display  
correct\_option: 7-segment display

117  
Which parameter of the pulse in Proteus controls the speed of stepper motor rotation?  
Option\_a: Amplitude  
Option\_b: Frequency  
Option\_c: Duty cycle  
Option\_d: Voltage  
correct\_option: Frequency

118  
In 8051-based Proteus projects, what is the advantage of using an LED over a bulb?  
Option\_a: Higher power consumption  
Option\_b: Faster response time  
Option\_c: Limited durability  
Option\_d: Requires a relay  
correct\_option: Faster response time

119  
When using a relay in Proteus, what component is connected in parallel with the relay coil to prevent damage?  
Option\_a: Capacitor  
Option\_b: Diode  
Option\_c: Resistor  
Option\_d: LED  
correct\_option: Diode

120  
Which register in the 8051 microcontroller is configured to control timer operations in a digital clock in Proteus?  
Option\_a: TMOD  
Option\_b: TCON  
Option\_c: SCON  
Option\_d: PCON  
correct\_option: TMOD

121  
In a triangular waveform generation circuit in Proteus, which of the following helps maintain waveform stability?  
Option\_a: High current  
Option\_b: Stable power supply  
Option\_c: Diode feedback  
Option\_d: High resistance  
correct\_option: Stable power supply

122  
What is the role of the 8051 P3.0 pin in a typical stepper motor interfacing project in Proteus?  
Option\_a: Interrupt signal  
Option\_b: Step control signal  
Option\_c: Clock source  
Option\_d: Serial input  
correct\_option: Step control signal

123  
When controlling a relay with 8051 in Proteus, what type of transistor is typically used to drive the relay?  
Option\_a: NPN transistor  
Option\_b: PNP transistor  
Option\_c: JFET  
Option\_d: MOSFET  
correct\_option: NPN transistor

124  
What component is commonly used to indicate AM/PM in a digital clock using Proteus?  
Option\_a: LED  
Option\_b: Buzzer  
Option\_c: Resistor  
Option\_d: Diode  
correct\_option: LED

125  
In a triangular wave generation circuit in Proteus, which property is directly affected by changing the resistor values?  
Option\_a: Wave amplitude  
Option\_b: Wave frequency  
Option\_c: Wave duration  
Option\_d: Waveform shape  
correct\_option: Wave frequency

126  
What is the main advantage of using a stepper motor in Proteus with an 8051 microcontroller?  
Option\_a: Continuous rotation  
Option\_b: Precise position control  
Option\_c: High-speed operation  
Option\_d: Low power consumption  
correct\_option: Precise position control

127  
In a digital clock circuit using Proteus, which timer mode of 8051 is often used for counting seconds?  
Option\_a: Mode 0  
Option\_b: Mode 1  
Option\_c: Mode 2  
Option\_d: Mode 3  
correct\_option: Mode 1

128  
What component is added in a Proteus relay circuit to protect the 8051 microcontroller from voltage spikes?  
Option\_a: Capacitor  
Option\_b: LED  
Option\_c: Flyback diode  
Option\_d: Zener diode  
correct\_option: Flyback diode

129  
In a Proteus triangular wave generator, increasing the capacitor value has what effect on the frequency of the waveform?  
Option\_a: Increases frequency  
Option\_b: Decreases frequency  
Option\_c: No effect  
Option\_d: Changes waveform shape  
correct\_option: Decreases frequency

130  
Which of the following Proteus components is used to display time in an 8051-based digital clock?  
Option\_a: 7-segment display  
Option\_b: LED  
Option\_c: Resistor  
Option\_d: Motor  
correct\_option: 7-segment display

131  
To interface a 220V bulb with an 8051 in Proteus, what component is essential for isolating high voltage?  
Option\_a: Resistor  
Option\_b: LED  
Option\_c: Relay  
Option\_d: Capacitor  
correct\_option: Relay

132  
Which instruction in 8051 assembly is used to set an output pin high for controlling an LED in Proteus?  
Option\_a: MOV  
Option\_b: SETB  
Option\_c: CLR  
Option\_d: CPL  
correct\_option: SETB

133  
In a Proteus simulation, what is the function of a crystal oscillator in a digital clock circuit with an 8051 microcontroller?  
Option\_a: Controls display brightness  
Option\_b: Provides timing signal  
Option\_c: Amplifies current  
Option\_d: Reduces power consumption  
correct\_option: Provides timing signal

134  
For clockwise and anticlockwise stepper motor control in Proteus, what component helps control direction?  
Option\_a: Relay  
Option\_b: Motor driver  
Option\_c: Transistor  
Option\_d: Capacitor  
correct\_option: Motor driver

135  
In Proteus, which of the following adjustments will increase the rotational speed of a stepper motor controlled by the 8051?  
Option\_a: Decrease pulse delay  
Option\_b: Increase pulse delay  
Option\_c: Increase voltage  
Option\_d: Decrease frequency  
correct\_option: Decrease pulse delay

136  
What is the primary use of a DAC in the Proteus simulation of a triangular waveform generator?  
Option\_a: Converts digital signal to analog  
Option\_b: Amplifies analog signal  
Option\_c: Generates digital pulses  
Option\_d: Increases frequency  
correct\_option: Converts digital signal to analog

137  
In an 8051-based Proteus simulation, what happens if the delay between pulses for a stepper motor is increased?  
Option\_a: Motor speed decreases  
Option\_b: Motor speed increases  
Option\_c: Motor rotates counterclockwise  
Option\_d: Motor stops  
correct\_option: Motor speed decreases

138  
What component can be added in series with an LED interfaced with the 8051 in Proteus to limit current?  
Option\_a: Diode  
Option\_b: Resistor  
Option\_c: Capacitor  
Option\_d: Inductor  
correct\_option: Resistor

139  
In a digital clock project using Proteus, which protocol is typically used to connect the RTC module with the 8051 microcontroller?  
Option\_a: SPI  
Option\_b: I2C  
Option\_c: UART  
Option\_d: USB  
correct\_option: I2C

140  
When using a relay with an 8051 microcontroller in Proteus, what signal type is typically sent from the 8051 to activate the relay?  
Option\_a: Analog signal  
Option\_b: Digital signal  
Option\_c: Sine wave  
Option\_d: Pulse-width modulated signal  
correct\_option: Digital signal

141  
In the Proteus simulation of a digital clock, what is the purpose of using a 7-segment display?  
Option\_a: To generate waveforms  
Option\_b: To display numerical data  
Option\_c: To amplify signals  
Option\_d: To switch relays  
correct\_option: To display numerical data

142  
Which component is used in Proteus to reverse the direction of a stepper motor controlled by the 8051?  
Option\_a: Relay  
Option\_b: Timer  
Option\_c: Motor driver  
Option\_d: Capacitor  
correct\_option: Motor driver

143  
What is the effect of increasing the pulse frequency to the stepper motor in a Proteus simulation with 8051?  
Option\_a: Increases motor speed  
Option\_b: Decreases motor speed  
Option\_c: Changes motor direction  
Option\_d: Stops the motor  
correct\_option: Increases motor speed

144  
Which component in Proteus allows the 8051 microcontroller to control an AC bulb indirectly?  
Option\_a: Transistor  
Option\_b: Capacitor  
Option\_c: Relay  
Option\_d: Resistor  
correct\_option: Relay

145  
In a Proteus simulation, what is the purpose of connecting a diode across the relay coil in an 8051-based circuit?  
Option\_a: To prevent voltage spikes  
Option\_b: To increase current  
Option\_c: To reduce noise  
Option\_d: To increase voltage  
correct\_option: To prevent voltage spikes

146  
What does changing the resistance in the triangular wave generation circuit affect in Proteus?  
Option\_a: Wave amplitude  
Option\_b: Wave frequency  
Option\_c: Wave duration  
Option\_d: Waveform type  
correct\_option: Wave frequency

147  
Which part of an 8051-based digital clock circuit in Proteus is responsible for precise timekeeping?  
Option\_a: Resistor  
Option\_b: Capacitor  
Option\_c: RTC module  
Option\_d: LED  
correct\_option: RTC module

148  
In Proteus, what happens if the delay between pulses for a stepper motor is reduced significantly?  
Option\_a: Motor stops rotating  
Option\_b: Motor rotates slower  
Option\_c: Motor rotates faster  
Option\_d: Motor reverses direction  
correct\_option: Motor rotates faster

149  
What type of waveform does a triangular wave generator produce in Proteus simulations?  
Option\_a: Sine wave  
Option\_b: Square wave  
Option\_c: Pulse wave  
Option\_d: Triangular wave  
correct\_option: Triangular wave

150  
In an 8051-based stepper motor control circuit in Proteus, what dictates the motor’s direction?  
Option\_a: Voltage level  
Option\_b: Sequence of control pulses  
Option\_c: Pulse width  
Option\_d: Motor inductance  
correct\_option: Sequence of control pulses

151  
What is the role of the resistor in the LED interface circuit with 8051 in Proteus?  
Option\_a: To increase brightness  
Option\_b: To limit current  
Option\_c: To reduce voltage  
Option\_d: To change LED color  
correct\_option: To limit current

152  
In a digital clock simulation with 8051 in Proteus, how are seconds typically counted?  
Option\_a: By using a delay loop  
Option\_b: By using an external RTC  
Option\_c: By using a crystal oscillator  
Option\_d: By using a high-frequency signal  
correct\_option: By using an external RTC

153  
In a Proteus digital clock circuit with 8051, how is the real-time clock typically synchronized?  
Option\_a: By adjusting LED brightness  
Option\_b: By using a crystal oscillator  
Option\_c: By switching relay states  
Option\_d: By changing capacitor values  
correct\_option: By using a crystal oscillator

154  
For clockwise rotation of a stepper motor with 8051 in Proteus, which component controls the current flow?  
Option\_a: Resistor  
Option\_b: Capacitor  
Option\_c: Motor driver IC  
Option\_d: Crystal oscillator  
correct\_option: Motor driver IC

155  
What component is used in Proteus to prevent voltage spikes when interfacing a relay with an 8051 microcontroller?  
Option\_a: Capacitor  
Option\_b: Flyback diode  
Option\_c: Resistor  
Option\_d: Inductor  
correct\_option: Flyback diode

156  
Which pin of the 8051 microcontroller is commonly used for interfacing with a relay in Proteus?  
Option\_a: P1.1  
Option\_b: P3.2  
Option\_c: P0.0  
Option\_d: P2.0  
correct\_option: P3.2

157  
In Proteus, what is the main purpose of connecting a diode across a relay coil in an 8051-based circuit?  
Option\_a: To reduce noise  
Option\_b: To prevent back EMF  
Option\_c: To increase current flow  
Option\_d: To stabilize voltage  
correct\_option: To prevent back EMF

158  
Which parameter in Proteus dictates the brightness of an LED interfaced with the 8051 microcontroller?  
Option\_a: Voltage  
Option\_b: Current-limiting resistor value  
Option\_c: Frequency  
Option\_d: Duty cycle  
correct\_option: Current-limiting resistor value

159  
In a digital clock circuit in Proteus, which component is often used to display the seconds, minutes, and hours?  
Option\_a: 4-digit 7-segment display  
Option\_b: Single LED  
Option\_c: Buzzer  
Option\_d: Variable resistor  
correct\_option: 4-digit 7-segment display

160  
When simulating a triangular wave generator in Proteus, what effect does increasing the capacitance in the circuit have on the waveform?  
Option\_a: Increases wave amplitude  
Option\_b: Decreases frequency  
Option\_c: Increases frequency  
Option\_d: Changes waveform to a square wave  
correct\_option: Decreases frequency

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